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CERTAIN DISEASES ASSOCIATED WITH CHANGES IN THE CIRCULATING LEUKOCYTES*†

CYRUS C. STURGIS, M.D., Ann Arbor, Michigan

A careful study of the circulating leukocytes yields exceedingly valuable and readily available information concerning the diagnosis and prognosis in certain diseases, especially when considered with other clinical data relating to the patient. In general, such knowledge is derived from a consideration of the number of leukocytes, the differential white blood cell count, the character of the nucleus as an indication of the maturity of the cell, and certain abnormal changes which occur in the cytoplasm.

Before discussing these changes in detail, it should be emphasized that there are ever present pitfalls concerned with any type of laboratory work which all too often may lead to an incorrect diagnosis or prognosis, and thereby result in more harm than good. These can be avoided provided first, that the laboratory findings are known to be absolutely accurate, and second, that when abnormal changes are present, they should be considered with a certain amount of skepticism unless they are in reasonable accord with the other features of the clinical picture. Finally, too much dependence should not be placed on single isolated observations for at least two reasons: first, because repeated tests are desirable as a check on the accuracy of the estimations; and, second, because frequent determinations furnish data upon which a curve may be constructed and this serves as a valuable indication concerning the general trend of any disease process. Elementary and obvious as these statements may appear, they are nevertheless pertinent, since not infrequently errors are observed which are associated with the interpretation of laboratory data in the present day practice of medicine.

*From The Thomas Henry Simpson Memorial Institute for Medical Research, University of Michigan.

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CHANGES IN THE POLYMORPHONUCLEAR LEUKOCYTES IN INFECTION

From a diagnostic standpoint, the presence or absence of a leukocytosis in association with an infection is of significance if for no other reason than the knowledge that certain infections are associated with a leukopenia whereas with others there is a leukocytosis. For example, it is known that in such infectious diseases as uncomplicated typhoid and paratyphoid fever, undulant fever, malaria, tuberculosis, influenza and measles, there is always a leukopenia, or, at least a lack of a leukocytosis, regardless of the degree of fever or the intensity of the infection. Other changes such as the presence of a well marked eosinophilia give valuable information, for such a change is often the first clew that a patient has trichinosis, which is often an obscure clinical syndrome presenting a difficult diagnostic problem. In addition, one of the most important types of information which can be derived from a careful study of the changes in the polymorphonuclear leukocytes is their relation to the prognosis in any given infection. This is obtained from three types of information, as follows:

1. The total polymorphonuclear neutrophil count may be considered as a measure of the bone marrow response to any given infection, and, therefore, as an indication of how successfully the marrow is fulfilling its attempt to contend with the condition. For example, if a patient with lobar pneumonia has a leukocyte count of 25,000 per cubic millimeter and 90 per cent of the cells are of the polymorphonuclear neutrophil type, it is favorable evidence that the body defense is responding adequately against the infection. On the other hand, if during the active course of the disease, the total count is 3,000 or 4,000 per cubic millimeter and of these only 50 to 60 per cent are polymorphonuclear neutrophil cells, it is a clear indication that the mechanism against infection is not coping with the situation in a satisfactory manner.

2. Information derived by an estimation of the number of mature and immature polymorphonuclear neutrophils gives an estimate of the *effort* which the bone marrow is making to combat an infection. The fundamental principle upon which this is based is the knowledge that the greatest endeavor on the part of the bone marrow is evidenced by an increase in the number of immature polymorphonuclear neutrophil cells. The degree of immaturity is readily determined by estimating the percentage of cells having a nucleus with two or more lobes connected by a slender filament and those with a horseshoe type of nucleus which is non-filamented. The former represents a more mature form of cell whereas the latter is known to be a younger type. This conception was originally based upon the more complicated classification of the polymorphonuclear cells as suggested by Schilling.[1] A much simpler and equally valuable method of obtaining this information was introduced by Cooke and Ponder[2] in which the percentage of non-filament (younger) and the filament (more mature) polymorphonuclear neutrophil cells are recorded. Normally six per cent of the non-filament forms is regarded as the average. In pathologic states these cells may include 50 per cent or more of the total number which would be indicative of a striking effort on the part of the bone marrow.

3. A third type of information which is of value in estimating the degree of intensity of an infection is the percentage of polymorphonuclear neutrophil cells which show various cytoplasmic changes.* The most striking of these[3, 4 and 5] is an alteration in the fine, evenly distributed granules which causes them to appear as coarse deeply bluish particles which are sometimes clumped into groups. Such a change has been designated as basophilic granulation of the polymorphonuclear neutrophil cells and the percentage of these showing such an alteration is regarded as an index of the intensity of any given infection. Although this phenomenon occurs most strikingly in an infectious process, it is not specific for it, because similar variations are observed following roentgen ray therapy, incompatible blood transfusions, malignancy associated with necrosis, myelogenous leukemia and possibly other conditions.

The value of these three types of information, namely, the total neutrophil count as indicating the response of the bone marrow, the percentage of young neutrophils as an index of the effort made by the bone marrow, and the percentage of neutrophil cells having basophilic granulation as an indication of the severity of the infection, can be illustrated by the following two case histories:

Case 1: A middle-aged female was under observation in the hospital for twenty days with acute sinusitis and cavernous sinus thrombosis. Death resulted from a terminal streptococcus septicemia. Throughout the period of hospitalization, the patient had a high, septic type of fever and appeared critically ill. Blood examinations were made at frequent intervals, but they are given for only three of the days since these show the important features from the standpoint of prognosis.

Day in hospital	Number P.M.N. cells per cu. mm.	Per cent non-filament cells	Per cent P.M.N. cells showing basophilic granulation	
1	5,730	44	33	
16	12,000	59	91	
19	1,645	6	97	(Death)

The patient illustrated the type of blood response which is observed in the presence of a lethal infection with which the body cannot cope. On the first hospital day of observation the blood studies did not show an entirely satisfactory response as indicated by a total polymorphonuclear neutrophil count of 5730 per cubic millimeter, despite a considerable effort on the part of the bone marrow (44 per cent of young or non-filament neutrophils). A moderately severe infection existed as indicated by the fact that 33 per cent of the neutrophils had basophilic granulation. Using these criteria, it will be seen that on the sixteenth hospital day, the total bone marrow response was better, and although the severity of the infection was increased, the effort of the bone marrow was keeping pace with this. The blood findings on the nineteenth hospital day showed striking changes, which are those to be expected in a fatal outcome. They indicated that the bone marrow was incapable of a satisfactory response to combat an infection of increasing intensity, which was evidenced by the appearance of a greater number of basophilic granule cells in the circulating blood.

Case 2: The patient was a female, twenty-six years of age, who developed the typical syndrome of agranulocytic angina following the use of amidopyrine in an attempt to secure relief from the symptoms of an acute sinusitis. Blood examinations were as follows:

Day in hospital	Number P.M.N. cells per cu. mm.	Per cent non-filament cells	Per cent P.M.N. cells showing basophilic granulation	
1	64	70	92	
7	6,000	48	68	(Pneumonia)
13	17,200	46	68	
16	8,800	28	33	(Recovery)

*Other changes are the presence of vacuoles and bluish gray staining areas in the cytoplasm. These also are evidence of a "toxic" effect but are probably a less reliable index of the severity of an infection than the basophilic granulations.

The blood findings on the first day in the hospital indicated a poor prognosis as shown by the inability of the marrow (total polymorphonuclear neutrophil count of 64 per cubic millimeter) to respond in the presence of an exceedingly severe infection (basophilic granulation cells, 92 per cent) despite a most strenuous effort (non-filament cells 70 per cent). On the seventh day the bone marrow response was more favorable which may have been due either to the pentnucleotide therapy which was administered as soon as the patient was admitted, the discontinuance of amidopyrine, or the additional stimulus to the defense mechanism by the development of lobular pneumonia as a complication. The satisfactory trend of the patient's illness, as shown by the hematologic changes is indicated on the thirteenth day. By the sixteenth day, the patient had manifested striking clinical evidence of recovery which is in accord with the blood findings. Evidence of toxicity was decreasing, the percentage of non-filament neutrophils and the total number of these cells was less, which is an indication that there was a diminishing need for bone marrow defense toward a less active infection.

INFECTIOUS MONONUCLEOSIS

This condition may be defined as an acute infectious disease characterized by fever, enlarged lymph glands and the occurrence of abnormal atypical lymphocytes in the circulating blood. Although it is undoubtedly infectious in nature, neither the organism causing the disease nor its portal of entry is known. The most frequently encountered symptoms of the syndrome are those common to any infection such as fever, general malaise, headache, chilliness, anorexia, sweating and weakness in addition to sore throat, enlarged and slightly tender lymph glands, coryza and cough. The disease process is variable, especially the degree of severity of its manifestations, but the three findings which must be present in order to support such a diagnosis are: first, fever, which may range from 99 to 105 degrees; second, enlarged lymph glands; and third, the presence of characteristic atypical lymphocytes in the circulating blood. Although the condition was described as long ago as 1885 by Filatow, it deserves more attention than it has received, for the following reasons:

1. Despite the fact that it is a relatively common disease, especially among children and young adults, the diagnosis is frequently overlooked. If the blood is not examined the condition is usually regarded as an upper respiratory infection or the "flu." Such a diagnostic error is not important from the standpoint of treatment, because the condition is self-limiting and the therapy is purely symptomatic. Its nature should be recognized, however, because of the frequently associated prolonged period of convalescence characterized by persistent weakness and ease of fatigue. Furthermore, relapses are not uncommon. If the correct diagnosis is made at the onset of the symptoms, the probable true course of the disease may be predicted and as a result both the physician and the patient will be less perplexed when the latter continues to be troubled with "unexplained" symptoms for a considerable period of time.

2. Within recent years the heterophil antibody reaction has been found to give a positive reaction in this disease and it has proved to be a valuable diagnostic aid. This reaction is an exceedingly simple one and may be described briefly as follows: normal human blood serum agglutinates sheep's cells in a dilution of one to four, but rarely in higher dilutions. Blood serum from patients with infectious mononucleosis usually agglutinates sheep's cells in dilution greater than one to four and in some instances as great as one to 1240. This reaction is a valuable and reliable diagnostic aid and should be utilized in all conditions in which this diagnosis is suspected. In a series of twenty-nine patients with infectious mononucleosis who were recently studied at the University of Michigan, twenty-three gave a positive heterophil reaction in dilutions of one to 128 or higher; three in dilutions of one to 64; and three in dilutions of one to eight. The highest titer giving a positive reaction was one to 1240.

3. A most serious mistake in diagnosis, for obvious reasons, is to confuse this condition with acute leukemia, and such an error is not rare. This is because both diseases are characterized by fever, enlarged lymph glands, abnormal circulating lymphocytes, and sometimes an enlarged spleen. The differential diagnosis between the two diseases is not always simple, especially when a patient is seen in the early stages of the illness. There are, however, several differential points which should be emphasized. The abnormal cells observed in infectious mononucleosis are atypical lymphocytes and may be described as having the nucleus of a lymphocyte and the cytoplasm of a monocyte. The latter stains light blue with Wright's stain and often appears to contain many bubbles causing the cytoplasm to have a "foamy" aspect. Although such a cell may resemble a lymphoblast somewhat, it usually is not difficult for an experienced observer to recognize its true nature. A second differential point is that uncomplicated infectious mononucleosis is not asso-

ciated with significant changes in the erythrocytes, whereas an anemia characteristically develops in the leukemias. Finally, the heterophil antibody reaction gives a positive result in infectious mononucleosis but a negative one in the leukemias.

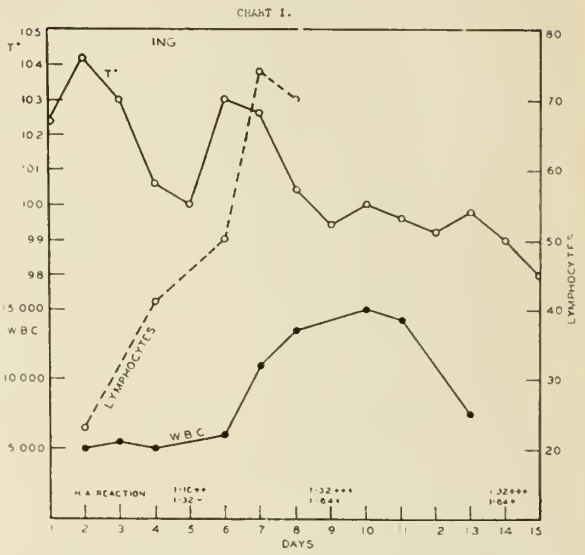
4. Some patients may present an obscure diagnostic problem, especially at the onset of the disease, for the clinical picture may consist only of fever without localizing signs (See Chart 1). At this stage there may be no complaints referable to the upper respiratory tract, the blood may not show the characteristic changes, the heterophil antibody reaction gives a negative result, and there may be no enlargement of the lymph glands or spleen. In such cases, it is only after the lymph glands become palpable or the atypical lymphocytes appear in the blood that the diagnosis is suspected.

5. About fifteen per cent of these patients have abdominal pain as an early presenting symptom, which may, at least superficially, suggest the diagnosis of acute appendicitis and lead to an unnecessary laparotomy. The basis of such a complaint is not known, but the suggestion has been made that it may result from swollen abdominal lymph glands.

6. Finally, about ten per cent of the patients give a transient positive Kahn reaction for an unknown reason, and the same pseudoreaction is said to be true of the Wassermann test. The importance of this is obvious. One patient, a young adult with the disease, had been told, much to his dismay, that he had syphilis as a result of a positive pseudoreaction and was referred for antiluetic therapy, when the true nature of his illness was established.

A further discussion of this disease will not be attempted in this article, since the main purpose in considering it is to emphasize the reasons for its importance and to stress the ease with which the correct diagnosis can be made, provided it is considered as a diagnostic possibility.

CHART 1. INFECTIOUS MONONUCLEOSIS



The disease in this patient illustrates the diagnostic difficulty it may present, especially during its initial phase. The patient, a male physician twenty-seven years of age, was in unusually good health until three days prior to admission, when he developed weakness, malaise, slight headache, a continuous low back pain, and anorexia. The day before admission his temperature was found to be 101.8 degrees. There were no symptoms of an upper respiratory infection. On admission his temperature was 102.2 degrees, pulse 92, and respirations 20 per minute. The physical examination was negative except for a few plaques of lymphoid hyperplasia on the posterior pharyngeal wall. There were a few small, discrete, moderately tender lymph glands palpable in both axillae. Blood examination showed hemoglobin, 98 per cent (Sahli); red blood cells, 4.8 million per cubic millimeter; white blood cells, 5,000 per cubic millimeter; polymorphonuclear neutrophils, 71 per cent; basophils, one per cent; eosinophils, 0; lymphocytes, 23 per cent; and monocytes, five per cent. The clinical picture was that of fever of unknown etiology and the possibility of typhoid fever was considered. It was not until the fourth hospital day, when the lymphocytes, some of which were atypical, rose to 40 per cent, that the diagnosis of infectious mononucleosis was suspected. The heterophil antibody reaction on the fifth day was suggestive of this diagnosis and later became more conclusive. After a few days in the hospital the cervical lymph glands became enlarged and tender and the spleen palpable.

AGRANULOCYTIC ANGINA

This disease is of interest because it is only recently that the syndrome has been accorded general recognition. During the past few years, however, there appears to have been a decreasing incidence and it has been determined that certain drugs, especially amidopyrine, bear an important etiologic relationship to it. Finally, there has been considerable discussion concerning the efficacy of the various forms of therapy which have been employed. The condition is characterized by a striking inflammatory reaction of the mucous membranes, usually of the mouth and throat but sometimes involving the vagina and rectum, and a remarkable diminution or complete disappearance of the polymorphonuclear cells from the circulating blood. Although cases had been described previously, it was the classic account of Schultz in 1922[6] that established the syndrome on a firm clinical basis. From that time until a few years ago an increasing number of cases were reported. In 1933 Madison and Squier[7] established the fact that the disease was apparently due in many instances to a hypersensitivity to amidopyrine. Since then it has been established that other drugs such as gold compounds, dinitrophenol and more recently sulfanilamide may likewise have an etiologic significance in certain individuals who evidently are sensitive to these drugs. That it did not commonly exist before 1922, then had an increasing incidence which reached its peak about three or four years ago, and, following this, had a decline in frequency, is affirmed by observations in large clinics in which all patients have routine blood examinations. The blood changes

are so characteristic that the possibility of overlooking the disease is unlikely. That its prevalence bears a direct relationship to the amount of amidopyrine which is used therapeutically throughout the world is possible but difficult to prove. Sufficient evidence has been accumulated, however, to warrant caution in the use of this drug.

Treatment: All observers are not in accord concerning the most effective treatment of this condition. Undoubtedly, the most important therapeutic indication is to omit all drugs, such as amidopyrine, which have a known injurious effect. Other forms of treatment which have their advocates are, the intramuscular injection of liver extract, the use of stimulating doses of x-ray, blood transfusions, and the intramuscular injection of pentnucleotide. There seems to be no substantial proof that liver extract is of therapeutic value and "stimulating doses" of the roentgen ray to the long bones as a form of treatment is not without danger because such an effect is preceded by a preliminary necrosis of the marrow. Scientific considerations and empiric observations lend more support to the value of the intramuscular injection of pentnucleotide.[8] Objection to the use of blood transfusions has been raised on the ground that they may depress the bone marrow and thereby diminish the granulocyte count of the peripheral blood to a greater extent. This has not proved to be the case in the writer's experience when small transfusions were given, and beneficial results appeared to follow.

THE LEUKEMIAS

No attempt can be made to discuss this disease with its several varieties in detail, and, therefore, only a few brief remarks will be recorded concerning the present views regarding its etiology, classification, diagnosis and treatment. For many years these diseases were classified as the acute and chronic forms of myelogenous or lymphatic leukemia. More recently, however, it has been possible to recognize the additional monocytic type which had probably been included previously in the myelogenous or the atypical leukemia group. This disease has a distinctive blood picture and to some extent certain clinical features which separate it from the other types.

Monocytic leukemia appears to be a distinct clinical syndrome, occurring more commonly in males between the fifth and sixth decades, although it has been observed at all ages. Acute, subacute and chronic forms of the disease are observed. Lesions of the mucous membranes of the mouth and throat are present in over two-thirds of the patients and they may be the initial symptom of the disease. Slight cervical adenopathy and splenomegaly may occur. The most outstanding symptoms are usually those due to the associated and frequently severe anemia. The white blood cell count varies between one thousand and several hundred thousand per cubic millimeter, and an increased percentage of monocytes in various stages of development are present. During the aleukemic stage the blood picture may closely resemble pernicious anemia. Biopsy of the sternal bone marrow shows a picture which varies from a normal appearance to one which is characterized by the complete displacement of the usual elements by monoblasts.

Like other leukemias, the ultimate outlook is hopeless; death usually results within two or three years after the onset. In the acute and subacute types the duration of the disease is much shorter. Blood transfusions and the use of arsenic in the form of large doses of Fowler's solution produce some symptomatic relief. The effect of the roentgen ray is disappointing.

The etiology of the leukemias has been in dispute for many years but the great balance of evidence at present suggests strongly that they are neoplastic rather than infectious in nature. The most convincing argument in favor of this view is that the process is hyperplastic and invasive in character and always proceeds to a fatal outcome.

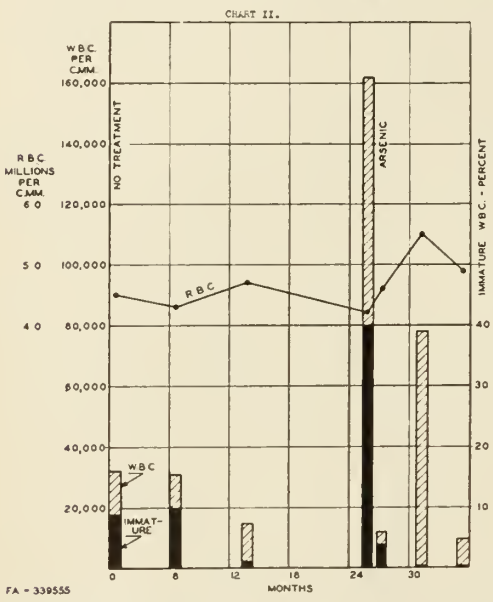
The diagnosis of leukemia in most instances is at once suggested by a blood examination which usually shows the presence of immature white blood cells and a great increase in the leukocytes. It should be emphasized that in the aleukemic phase, the leukocyte count of the circulating blood may be at a normal or subnormal level. A sudden and striking reduction may occur spontaneously, without a known reason, or may follow the therapeutic administration of arsenic or the roentgen ray. Even under these circumstances, there may be immature white blood cells present in the peripheral blood which suggest the diagnosis, but not infrequently it is necessary to resort to a sternal puncture or the microscopic study of an excised gland in order to determine the diagnosis.

It is interesting to note that the characteristic changes of leukemia may be present in the blood for some time prior to the development of symptoms. (See Chart II.) Just how long the alterations in the blood precede the symptoms of the disease is a matter of speculation but it must be conceded that the latter do not appear usually until an anemia develops or a leukemic infiltration, in the lymph glands, spleen, skin or elsewhere, makes itself apparent.

The treatment of the leukemias depends primar-

ily on the roentgen ray and brilliant transient results are obtained by its use, especially in the chronic forms, although there is no convincing evidence that it prolongs life. It is harmful in the acute leukemias and is, therefore, contraindicated and produces only moderately beneficial results in the subacute types. The treatment with this therapeutic agent is purely symptomatic and should be used only when the patient has very

CHART II. THE LEUKEMIAS



Showing that the characteristic blood changes of leukemia may precede the symptoms of the disease for several years. This patient, a male thirty-five years of age, when first seen in 1934, was referred for examination because purely by chance (he was serving as a normal control to test the accuracy of a young physician's new hemocytometer) it was discovered that his leukocyte count on repeated determinations varied between 30,000 and 35,000 per cubic millimeter. On examination a few days later at the Simpson Memorial Institute his leukocyte count was found to be 36,000 per cubic millimeter and nine per cent of the cells were myelocytes. The red blood cells were normal at this time, the physical examination showed no abnormalities and the patient had no complaints. Treatment was withheld but the patient was advised to report at intervals for observation. There was no essential change in his condition until about two years later when his leukocyte count was found to be over 160,000 per cubic millimeter and 40 per cent of the cells were myelocytes. The patient was asymptomatic but the spleen was palpable for the first time. Following the administration of Fowler's solution up to a gradually increasing dosage of 38 drops daily, which was the limit of tolerance, there was a remarkable drop in the white blood cell count. When last seen on February 10, 1938, the leukocyte count was 8,150 per cubic millimeter, no abnormal white blood cells were present, the red blood cell count was 3,570,000 per cubic millimeter and the hemoglobin was 63 per cent (Sahli). Since first prescribed, Fowler's solution had been used in a variable dosage. The patient has been asymptomatic during the period of four years of observation.

definite complaints, for it is well known that eventually, regardless of the striking improvement following its initial use, all such patients become refractory toward it. Its routine application at regular intervals when the patient is in good condition is to be condemned, therefore, as a needless waste of a valuable therapeutic agent. The roentgen ray and arsenic should be employed with extreme caution or withheld when the white blood count falls to 20,000 per cubic millimeter or less.

Arsenic in the form of Fowler's solution is of value and worthy of a trial, especially in the chronic myelogenous type of the disease, although it is inferior to roentgen ray therapy. It had been used successfully until the advent of the latter and fell into disuse temporarily. To produce satisfactory results it should be given in gradually increasing doses to a point where a therapeutic effect is produced or the patient's tolerance is reached, as indicated by gastro-intestinal complaints or other symptoms suggestive of the toxic effects of the drug. It should then be discontinued for a week or so and resumed in a dosage which is tolerated by the patient.

The only other therapeutic measure of value is repeated blood transfusions which are of temporary benefit in combating the associated anemia.

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THE USE OF SULFANILAMIDE IN OTOLARYNGOLOGY AND OPHTHALMOLOGY

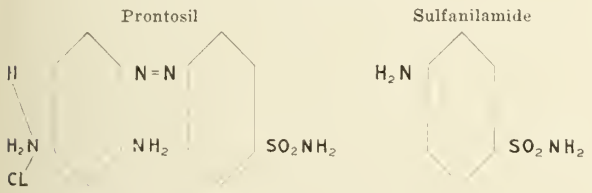
CECIL C. JONES, M.D., Des Moines

Three years ago last February Domagk's original article appeared recording his observations with the use of a chemotherapeutic agent, the active radical of which was prontosil. His reports stated that it was very effective in the treatment of streptococcic anginas, erysipelas and septic abortion. The French soon corroborated the observations of Domagk, and early in 1936 Colebrook and Kenny in England confirmed the results of their predecessors, basing their observations upon a series of puerperal sepsis cases. Long and Bliss of Johns Hopkins University in Baltimore then began studying the drug, recording their experiences. Their published observations upon all phases of this drug are the most comprehensive in the English language.

Sulfanilamide was the name given to the chemical compound, para-aminobenzenesufonamide, by

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the Council on Pharmacy and Chemistry of the American Medical Association in April of 1937.[1] Although it is a relatively new therapeutic agent, a chemist in 1908 mentioned this compound as a derivative of the azo dyes. The chemical structure of sulfanilamide and prontosil, each founded upon a benzene ring is as follows:



The present conception is that sulfanilamide is the active therapeutic agent and that prontosil has to be converted into sulfanilamide before it can render its action.

Biochemists and physiologists have done much experimental work to determine the manner in which sulfanilamide accomplishes its results. These experiments have been conducted upon various living organisms of known virulence in several culture media, including living bone marrow. Mice, rabbits, and monkeys have been infected with various organisms of known virulence so that observations upon controls and upon those to whom sulfanilamide had been administered have been accurately recorded. The present conception of the mode of this drug's action is the result of these numerous observations. That conception is: first, it does not possess any bactericidal effect upon any organisms present; second, it does not stimulate phagocytosis; third, it does not affect the capsule of encapsulated organisms; fourth, it does not affect the virulence of any organism; fifth, according to the bone marrow experiments of Osgood[2] it protects the phagocytes against the toxins of the streptococcus; sixth, it does not influence the normal body immunologic processes as is suggested by not influencing the gonococcus complement fixation test of the blood; seventh, it does not normally influence the white blood count, the red blood count, the differential count, or the platelet count; and eighth, its action is to inhibit the multiplication of susceptible organisms, that is, its action is growth arresting, which effect is termed bacteriostasis.

Erlich once stated that an effective chemotherapeutic agent must meet two fundamental requirements; the drug must possess an affinity for, and a consequent toxic effect upon, the protoplasm of the parasite, and at the same time not have any deleterious effect upon the host. The three chemotherapeutic agents which most nearly meet these specifications are arsenic, quinine, and now sulfanilamide. This drug has certain specific indications for its use. It is considered specific only for the beta hemolytic streptococcus. Even with such an infection it is not 100 per cent effective, but the reason for this is not understood. Bordet showed years ago that the invasiveness of the hemolytic streptococcus was due to its power to resist phagocytosis. However, observations disclose that sulfanilamide therapy instituted early in hemolytic streptococcus infections is more effective because the number of organisms present are not too great.

Its use is indicated in pneumococcus infections of Type III, particularly because there is no specific serum for this strain and because it definitely is bacteriostatic to this strain as well as strains of Types I, II, and XIV, but for which there are specific serums. It definitely has no effect upon the Streptococcus viridans. There are five strains in Lancefield's group D, and two in his group G, which are not influenced by sulfanilamide. In meningococcus meningitis it is more effective than meningoccocic antiserum. In fifty-two cases treated with prontylin the mortality rate was 15 per cent, while in those treated with the antiserum the mortality rate was 30 per cent. The meningococcus produces a toxin as does the hemolytic streptococcus. In gonococcus infections, such as urethritis, vaginitis, prostatitis, arthritis, and ophthalmia, it is an effective form of therapy in about 50 per cent of the reported cases.

Therefore, in our field, sulfanilamide is indicated in the following disease processes considered to be due, in a high percentage of cases, to a hemolytic streptococcus. In streptococcic tonsillitis and pharyngitis, the results have not been striking due to the usual short clinical course of these infections. However, the use of the drug will decrease the complications caused by the bacteremia which exists at some stage during such infections. Ludwig's angina, pharyngomaxillary cellulitis, acute cervical lymphadenitis, acute streptococcic laryngitis, peritonsillar cellulitis, acute suppurative otitis media, meningeal complications of mastoiditis, septic phlebitis, streptococcic septicemia, acute streptococcic osteomyelitis, erysipelas, streptococcic orbital cellulitis, streptococcic pneumococcus, Type III, and gonococcic ulcers of the cornea as well as gonorrheal ophthalmia are all specific indications for the use of this drug. In the management of acute otitis media it is necessary to make cultures when the paracentesis is performed. In peritonsillar cellulitis if adequate sulfanilamide therapy is instituted before fluctuation develops, the process frequently regresses instead of progressing to abscess formation. In erysipelas, particularly in the newborn

where the mortality rate is very high, sulfanilamide stops the progress of the lesion, but the eruption already developed heals only with the usual speed of resolution. In scarlet fever, sulfanilamide therapy results in subsidence of fever and the complications of otitis media, cervical adenitis, and nephritis are materially reduced.

In the management of acute suppurative otitis media with sulfanilamide, we as otologists are going to encounter our greatest grief. An unknown percentage of such cases will develop a surgical mastoiditis which in reality will be a cold abscess. In other words, the drug is going to mask the signs and symptoms upon which we have formerly relied. Such a patient may be free of fever or have only an insignificant rise. During the third week there will probably be no mastoid tenderness or edema unless the cortex ruptures, the leukocytosis will be neglible and the ear may even become dry, only to discharge or cause pain again within a few days. Although the x-ray is not infallible I do believe we will be forced to use it more before a patient with an acute suppurative otitis media of two weeks' duration or more is discharged. On the other hand this drug is going to be a distinct adjunct in the management of those complications of acute suppurative mastoiditis such as septic phlebitis of the emissary veins from the mastoid or the sigmoid sinus itself, as well as dural and intracranial extensions of the process. However, I do believe that all such cases should be handled surgically, as heretofore, and one should never procrastinate in the hope that sulfanilamide therapy will be adequate. Moreover, if a case is receiving sulfanilamide therapy and develops the signs and symptoms of a septicemia, blood cultures will not as likely be positive as in the past. Many observers report that in a streptococcic septicemia the blood stream will become sterile in twenty-four to forty-eight hours.

In Baltimore in a series of twenty-three cases of streptococcic meningitis, nineteen cases recovered; this represents the most spectacular results of this drug. Lewy[3] reported five cases of otogenic streptococcic meningitis with three recoveries. In osteomyelitis, clinical observation has taught that the drug must be continued for at least two weeks after apparent resolution; otherwise relapses are common. An important point to remember is that the drug does not have any antitoxic properties; therefore it does not replace streptococcic antitoxin. Although it causes a recession of fever, the toxic symptoms other than fever still persist and the usual methods of combating toxemia must be employed.

In our field it would seem that the drug is most effective in diseases of the throat, then the ear, then the eye, and lastly the nose. I have not been able to find any reports warranting its use in acute sinusitis. Personally I would use it empirically in postoperative septal abscesses or compound facial fractures with secondary infection. In the eye Newman[4] reports that eight cases of gonococcic ophthalmia made a rapid recovery with sulfanilamide. Lewy reported twelve cases of gonococcic ophthalmia recovering without complications. In personal communications with Sanford Gifford, M.D., Harry Gradle, M.D., and A. N. Lemoine, M.D., each stated that they had not had any experiences with the drug in ophthalmic infections.

Sulfanilamide is administered in tablet form by mouth for two reasons: first, because it is the most efficacious mode of administration; and second, because it is relatively insoluble in liquids. The crystalline form of sulfanilamide is used intrathecally or by hypodermoclysis. A one per cent solution is prepared by adding the powder to normal saline after it has been brought to the boiling point and allowed to cool to 90 degrees. It is then cooled to body temperature for administration. It is likely to crystallize at lower temperatures than 37 degrees C., but will redissolve on heating. For intrathecal administration a rather complete spinal drainage is executed and then, by gravity, 15 to 25 cubic centimeters of the one per cent sulfanilamide in normal saline are introduced. The crystalline form is similarly dissolved in Hartmann's solution when its use by hypodermoclysis is desired. Intravenous use is not recommended because the drug is secreted so rapidly through the kidneys. Prontosil is used either intramuscularly or subcutaneously. However, one always finds some discomfort present at the site of injection.

In computing the dosage one must remember the object to be accomplished, which is to produce and maintain a therapeutically effective concentration in the blood and tissues. It has been determined that a blood concentration of six milligrams per cent is adequate in mild infections and ten to fifteen milligrams per cent are required for severe infections. The blood concentration may be computed by the method of Marshall.[5] The concentration of the drug in such tissues as the skeletal muscles, heart muscle, liver, lung and spleen is the same as in the blood. In the skin it is slightly less. In the brain it is about two-thirds of the blood concentration, although in the cerebrospinal fluid it is only slightly lower than in the blood and is attained at practically the same time, while in bone and fat it is

even much lower. No mention of the concentration in various mucous membranes is made in the literature. However, the drug as it is encountered in the blood is filterable through a collodion membrane. It has been determined that the blood concentration reaches its maximum four hours after the administration of the drug by mouth, intramuscularly or subcutaneously. Therefore, it is advantageous to administer the drug at four hour intervals and this is most effectively accomplished by oral administration.

There is no evidence that sulfanilamide becomes accumulated and fixed in any organ or cell group; it is excreted 100 per cent through the kidneys. Several days are required to establish an equilibrium between the intake and output. After discontinuance of the drug about three days are required to obtain total elimination with a normal renal function. An important observation is that the maximum bacteriostatic effect is reached about forty-eight hours after the effective therapeutic blood concentration is attained.

The dosage is the same for all the infections in which it is indicated, except that when life is threatened, as in septicemia or meningitis, the usual daily dose is doubled. Oral administration is considered the most efficacious because it allows doses to be given at four hour intervals, a requirement to maintain a constant blood and tissue concentration. Long and Bliss state that the drug causes an acidosis which Hartmann maintains is secondary to the methemoglobinemia induced by this drug. In other words, there is an anoxic effect produced upon the brain cells which results in a compensatory stimulation of the respiratory center with resultant hyperpnea; this brings about an excessive loss of carbon dioxide from the blood with a rising plasma *p*H; with this there occurs a compensatory excretion of the base bicarbonate into the urine; this results in a fall of the base bicarbonate of blood and body fluids with a gradual return of blood *p*H to normal. Methylene blue converts methemoglobin back to hemoglobin thus avoiding the cyanosis that accompanies the administration of sulfanilamide in 75 per cent of the cases. Methylene blue may be given intravenously in normal saline in doses of 1.0 to 1.5 milligrams per kilogram of body weight. Therefore, Hartmann advises the administration of one to two grains of methylene blue with each dose of sulfanilamide by mouth. When prescribing sulfanilamide it is recommended that the total twenty-four hour dose be given as the first dose, to be followed at four hour intervals with the fractional twenty-four hour dosage. The following table represents the accepted standard dosage which is approximately fifteen grains or one gram per 20 pounds or 9.1 kilograms of body weight per twenty-four hours.

Oral dose per twenty-four hours

	Mild infections	Severe infections
Infants, up to 40 lbs.	15 to 25 grains	30 to 50 grains
Children, 40 to 80 lbs.	35 to 45 grains	70 to 90 grains
Older children, 80 to 120 lbs.	50 to 60 grains	100 to 120 grains
Adults	60 to 80 grains	120 to 160 grains

Blood sulfanilamide determinations have shown that in order to maintain a blood and tissue concentration of ten milligrams per cent, 0.15 of a gram per kilogram of body weight is required in an infant and 0.1 of a gram per kilogram of body weight in an adult. With children who will not or cannot swallow a tablet, it may be crushed into a powder and spread upon bread or mixed with sugar or jelly. With those cases where the oral administration is impractical, the crystalline form, one gram per 100 cubic centimeters of Hartmann's solution by hypodermoclysis, is the mode of choice, and the following table sets forth these standards:

Infants, up to 40 lbs.	One gram per 100 c.c.
Children, 40 to 80 lbs.	Two grams per 200 c.c.
Older children, 80 to 120 lbs.	Three grams per 300 c.c.
Adults	Four grams per 400 c.c.

For prontosil 2.5 per cent solution, used intramuscularly or subcutaneously, the dosage is one cubic centimeter per pound of body weight per twenty-four hours, administered at four hour intervals. Its maximum daily dose should not exceed 120 cubic centimeters. However, not many will desire to subject their patients to this mode of administration except as an auxiliary procedure. Regardless of the mode of administration little therapeutic effect may be expected unless a blood concentration of five milligrams per cent or more is maintained. However, except in the severe infections, rarely is it necessary to continue the full dosage after forty-eight hours of medication. Then it is usually advisable to taper off the doses, reducing first to one-half, then to one-fourth over a period of a week. As a general rule the proper time to discontinue the administration of sulfanilamide is after the patient has been symptomless for two or three days; and in septicemias and meningitis, when the cultures have been negative for three successive days. In streptococcic osteomyelitis the dosage should be continued for at least two weeks after apparent resolution, otherwise relapses are frequent. As previously stated about three days are required completely to free the body of the drug when a normal renal function is present.

Although sulfanilamide is considered a relatively safe chemotherapeutic agent there exist specific contraindications and limitations sur-

rounding its administration. It should not be given in the presence of a leukopenia because in a small percentage of individuals the benzene radical of this drug may irreparably damage the hematopoietic system. Several cases of agranulocytosis have been reported as developing during the course of the administration of this drug. Likewise it would be contraindicated in the presence of an anemia, since cases of hemolytic anemia have been attributed to its use. The existence of an impaired renal function demands caution in the administration of this drug, and the dosage should be regulated by the sulfanilamide blood concentration; it should never be permitted to exceed 15 to 25 milligrams per cent. Sulfhemoglobinemia results when this drug is combined with coal tar derivatives, sulphates, and saline laxatives such as magnesium sulphate. Likewise, magnesium sulphate packs should not be used in erysipelas if sulfanilamide is being administered. Sulfhemoglobin is a very stable compound, and may, therefore, persist for weeks, the only treatment being an exsanguination transfusion. Since sulfanilamide is excreted 100 per cent through the kidneys in combination with water its only antidote is the forcing of large amounts of water.

Numerous toxic effects have been associated with the administration of this drug, but to date the total experience is insufficient to evaluate justly their true significance. Prontosil has one distinct advantage over sulfanilamide; that is, its only toxic manifestation is the production of fever. It does cause the skin to become pink and the urine red, but does not give rise to any kidney irritation. Sulfanilamide, on the other hand, produces many toxic manifestations which are less evident when the patient is confined to the bed than when he is in an ambulatory state. Usually within four to six hours after the initial dose of the drug the patient complains of one or more of the following transient symptoms: dizziness, headache, anorexia, nausea, giddyness, mental dulness, a sensation of mild intoxication, lightheadedness, muscular weakness, sweating, tinnitus, or mild paresthesia. The first subjective observation usually noted is a cyanosis which may or may not be due to the drug. Most frequently, however, it is due to a methemoglobinemia which has been reported in 75 to 95 per cent of the cases. It can only be definitely diagnosed by means of a spectroscope but can be prevented by the administration of methylene blue in conjunction with the sulfanilamide. With an ordinary cyanosis from this drug there exists a methemoglobinemia of from 25 to 30 per cent which renders the patient just that percentage anemic, because methemoglobin neither absorbs nor carries oxygen to the tissues. The ordinary hemoglobin tests, routinely used, will record the hemoglobin as normal or above normal, and thus are misleading. A rash, similar to measles, develops in some cases on the tenth to fourteenth day after administration of the drug. It is believed that the drug has vascular toxic properties for some individuals. The onset of the rash is usually accompanied by fever and general malaise. The rash fades when the drug is discontinued. Although it is an indication to withhold the drug, it has sometimes been continued, if the patient is very ill, with no untoward results. Individuals who develop a rash should be kept out of the sun, because some of them become photosensitive.

Fever, which is frequently associated with the administration of prontosil, is also encountered with sulfanilamide. In one series of 134 cases, fever occurred in twenty-one. It usually appears between the seventh and tenth day, but does occur as early as the fourth and as late as the thirteenth day. This drug fever simulates serum sickness and is associated with general malaise, nausea, itching, and tinnitus, but it does not have an associated arthritis. Fever and all other effects subside in from two to four days after the drug is stopped. Ordinarily if fever occurs the drug should be discontinued, but if its use is indicated it may be continued and the fever ignored, without any untoward results having been reported. Hemolytic anemia is a rare but grave toxic effect and may develop very rapidly; that is, in two or three days. Therefore, a red blood count should be made every two or three days. However, the blood destruction ceases with the stopping of the drug. In a severely ill patient it is advisable to continue with the drug and replace the red blood cells by means of transfusions. Agranulocytosis has occurred in instances where the drug has been used over a period of several weeks. A few of these patients died and a few recovered after the drug was discontinued. Therefore, a white blood count should be made every few days. A progressive lowering of the white blood count is one of the most important criteria demanding discontinuance of the drug. Jaundice associated with impaired liver function has been observed. Toxic optic neuritis is reported to have occurred several times, once as early as the third day. It underwent resolution within one week after the drug was stopped. Allergic phenomena consisting of urticaria, sneezing, itching, and asthmatic symptoms have occurred and have been corroborated by the patch test.

As a prophylactic agent the drug is advocated in streptococcic and meningococcic epidemics. The prophylactic dose for a child is one five grain

tablet every eight hours and for an adolescent, twice that dosage.

CONCLUSIONS

1. This drug is a valuable adjunct to our present armamentarium.

2. Its use must be limited to its proved indications.

3. Adequate dosage must be regulated by blood sulfanilamide concentration determinations.

4. Adequate dosage over a short period of time is more effective than small doses over a longer period.

5. There are definite contraindications to its use.

6. The drug is not without numerous toxic manifestations.

7. Routine blood counts are essential during the administration of this drug.

Author's Note: Subsequent to the time of writing this paper Fernandez[6] has reported eight cases of gonorrheal ophthalmia treated with sulfanilamide, in which more satisfactory results were obtained than with any heretofore known therapy.

Rambo[7] has reported some very interesting observations upon the local use of sulfanilamide in induced streptococcic ocular infections of rabbits' eyes. The injection of a saturated solution of sulfanilamide in normal saline, subconjunctivally or into the anterior chamber, produces no deleterious effects. Neither does dusting crystalline sulfanilamide into the conjunctival sac or on the cornea cause any damage. The injection of sulfanilamide into the vitreous body produces a moderate opacity of the substance but no demonstrable effect upon the retinal function. Although the drug administered by mouth markedly checks the growth of a culture of streptococcus in the vitreous body, it eventually becomes completely purulent. Therefore, foreign protein therapy is suggested to increase the leukocytes and other immunologic factors. The drug administered either by mouth or into the aqueous Lumor by injection permanently overcomes an anterior chamber infection. Either the powder or a saturated solution can effectively be used for infections of the conjunctiva or cornea, and it is particularly indicated for pneumococcic ulcers of the cornea. In recent wounds of the cornea or conjunctiva, sulfanilamide is recommended as a cleansing irrigating solution. Lastly, their experiments determined that a greater local concentration could be attained by injection of the drug into the eye than by oral administration.

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MARGINAL REFRACTIVE ERRORS*

Orval L. Thorburn, M.D., Ames

How large a refractive error may be completely ignored? Conversely, how small a refractive error is one justified in considering as a prescription for glasses? When a patient comes in for a change in glasses, how much of a change in the prescription is necessary to justify making such a change?

These are some of the questions which I would like to consider for a few minutes. We have all seen patients with relatively large refractive errors, who admitted only mild symptoms or denied all symptoms of eyestrain. On the other hand, some patients with marked symptoms, have small refractive errors and get amazing benefit from glasses correcting these seemingly insignificant errors. In this discussion I am going to make an arbitrary limitation to the strength of error considered. I will term as "marginal" those spherical errors up to one diopter and cylindrical errors up to one-half diopter. In looking over my records, I find that a large percentage of prescriptions fall into this classification. Sometimes I wonder if they are all necessary; yet these patients obtain as much relief as some patients with larger errors.

The problem of the small or "marginal" refractive error has been a very perplexing one to me. In a sense, it seems like a very elementary consideration, but it is one that comes up day after day in private practice and demands our immediate decision. If one decides to ignore a small refractive error and tells the patient he needs no glasses or needs no change in glasses, one may be denying that patient an opportunity for relief of his complaints. If one prescribes glasses for all patients who present themselves with eye symptoms and show only the smallest refractive errors, a certain number of these patients will discover for them-

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selves that they are as comfortable without their glasses and are not relieved of their symptoms. What is one to do in these cases? Are there any rules which one can follow? I have found very little help along this line in textbooks of ophthalmology or even in books on refraction. After all, it seems to be a matter of fitting the treatment to the individual patient and, for this, no definite rules can be formulated. I will be guided in what I have to say, largely by personal experience, and it is my hope that others will express their experiences so that we may all benefit.

What are the most common complaints? In my experience, most patients coming in to see if they need glasses complain of headache. If asked the location, they usually designate the forehead or temples, or occasionally the occiput or vertex. The pain may be in almost any other location without ruling out eyestrain as a cause. It is rarely unilateral, extremely acute, or of the occasional type, however, when of ocular origin. The time of day, in my experience, is of little diagnostic significance and definite relation to near work cannot always be elicited in the history. Next in frequency is the complaint of eyestrain. Upon questioning, the patient usually explains that his eyes feel tired, or ache, or burn or get red. Sometimes there is the complaint of spots before the eyes or blurring. Sensitiveness to light and drowsiness are also rather common symptoms.

It is convenient to classify these symptoms as local and reflex. Both are manifestations of fatigue, muscular and nervous. This fatigue is brought about by ametropia or motor incoordination (imperfect convergence) or a combination of both, coupled with overwork, in an individual with poor reserve power. In other words, there is too big an eye load for that individual. Some of the reflex symptoms such as vertigo, nausea and vomiting and general nervousness must be elicited because the patient does not associate them with his eyes. I am considering here only low degrees of ametropia as a cause for these symptoms, but I believe that more often than is generally supposed, there is a weakness of convergence power or muscle coordination, which is equally responsible, and may continue to act as a cause for trouble when correction of the ametropia fails to give the desired relief.

Let us consider the various types of refractive error and their relative importance in the production of symptoms. Uncomplicated myopia, in my experience, causes only reduced visual acuity at a distance. If a patient with myopia of less than one diopter complains of symptoms of eye fatigue, one should look for other possible causes. Usually one-half diopter of myopia reduces the distance vision of each eye to about 20/40 and one diopter reduces it to 20/100. An error of even —0.25 should be corrected for driving and similar distant visual activities, because it certainly makes for greater efficiency; other than that, such an uncorrected error should cause the patient no harm or discomfort. Hyperopia, on the other hand, may cause considerable difficulty. Whenever the reserve accommodative power is reduced, either by age or general debility, a correction of even +0.50 sphere may be of immense benefit. Excessive use of the eyes for near work may also call for such corrections. Cases to illustrate are as follows:

1. Beginning presbyopia: Mrs. J. B., housewife, healthy and active, forty-six years of age, complained of much nervousness and slight blur for reading and sewing. The uncorrected vision in each eye was 20/20 —1. She accepted +1.00 each eye, with 20/20 —1 vision. With this correction, the near point of accommodation was ten inches. The patient reported complete relief.

2. General debility: Miss M. Mc., stenographer, anemic and physically below par, twenty-seven years of age, complained of frontal headaches related to her work. Standard vision was present, accepted +0.50, each eye, and with this correction the patient reported relief from headaches.

3. Excessive work: Mr. R. W., college student, overweight, robust male, nineteen years of age, complained of frontal headache from study. The prescription was +1.00, each eye, resulting in much relief.

It should not be necessary to prescribe for one diopter or less of hyperopia in small children as long as they have normal accommodative power for their age. Occasionally, however, if the near point of accommodation is taken routinely, one will find a child with diminished accommodative reserve, and even a +0.50 spherical correction will help in school work and much reading.

Astigmatism presents a more difficult problem. Here we have not only the strength, but also the axis to consider. It is in this condition that marginal errors present the most difficult decisions. Relatively few patients show a refractive error without some astigmatism in one eye or the other. Patients complaining about their present glasses will often show small changes, either in strength, or axis, or both, and one is confronted with the problem of deciding whether these small changes can account for their difficulties. We are often accused by the general practitioner or internist of prescribing glasses or changing lenses indiscriminately; yet, very often a change of ten degrees in

axis or a quarter of a diopter in strength means the difference between comfort and discomfort to some patients. Small degrees of astigmatism at oblique axes are especially prone to cause trouble. There may be a psychic element, which accounts for the relief in some cases, but I cannot believe that this is always a factor. Cases to illustrate are as follows:

1. Small degree myopic astigmatism, nearly horizontal axes: Mr. G. T., twenty-nine years of age, field work and about half-time office work, fair general health, complained of tiring of the eyes for near work. The prescription was O.D., —0.25×15 and O.S., —0.25×180. The patient reported considerable relief.

2. Myopic astigmatism, oblique axes: Mr. H. C. O., twenty-nine years of age, civil engineer, good health, complained of tiring of the eyes. The prescription was O.D., —0.37×75 and O.S., —0.50×170. The patient reported benefit.

3. Compound hyperopic astigmatism: Miss D. R., twenty-four years of age, office worker, healthy, complained of frontal headache and burning of the eyes. The prescription was O.D., +0.25+0.25×90 and O.S., +0.25×90. The patient reported much benefit and wore the glasses all of the time.

The following case reports are examples of small changes in lenses.

1. Miss D. J., twenty-nine years of age, office worker, rather nervous type, complained that the glasses she was wearing made her dizzy; —1.00, each eye. The prescription was O.D., —0.75 —0.25×180 and O.S., —0.75—0.25×180, and she obtained complete relief.

2. Mrs. M. L., thirty-three years of age, housewife, fatigued easily, complained of much frontal headache, some dizziness and nausea. She was wearing O.D., +0.50×90 and O.S., +0.25×90. The new prescription of O.D., +0.25+0.75×90 and O.S., +0.62+0.37×90 brought marked relief.

Anisometropia of small degrees, too, definitely causes symptoms in some cases, as evidenced by the relief given by correcting glasses. An example was A. B., a school girl, ten years of age, who complained of headache for close work, and that she could not see as well with one eye as with the other. The prescription was O.D., —0.25 and O.S., +0.25. The symptoms were immediately relieved.

I will summarize by saying that small refractive errors should not be ignored, since their correction often gives marked relief. Whether to prescribe glasses with confidence, in these cases, depends on a broad medical consideration of the patient; his nervous and physical make-up, the work to which he puts his eyes, his muscular and nervous reserves; and other local factors such as the influence of phorias and convergence insufficiency on the symptomatology. Even then, the problem is a puzzling one and sometimes only a trial of glasses will answer the question.

Discussion

Dr. Abbott M. Dean, Council Bluffs: I had hoped that Dr. Thorburn would agree more nearly with my own ideas on the problem of prescribing lenses for marginal refractory errors. It so happens that I prefer not to advise them. The strength of a lens which may be omitted in perfect comfort varies first with the age of the patient on which depends the accommodation ratio of power to requirements. A grade school child with a power of sixteen diopters pays no attention to a requirement of four diopters or an additional one diopter of work to be done over that required to read at thirteen inches. Or in high school, with a longer arm and therefore reading requirement for the normal reduced to two and one-half diopters, he does not pay any attention to an additional three-quarters of a diopter when his power is twelve diopters. This is proportionately true up to thirty-five years of age where a person will disregard a one-half of a diopter of hyperopia with a power of six diopters. From that time on the "margin" diminishes so that a person forty-five years of age likes best the strongest glass he will tolerate for distance; even a glass which overcorrects a quarter of a diopter for distance if its purpose is explained.

It has been my observation that one-half of a diopter of astigmatism with the rule is normal for children. This seems to be one of those provisions of nature against the development of astigmatism which appears in eyes in later years so that there will be none during the prime of life. This astigmatism, unless off axis, may be disregarded because it does not affect vision sufficiently to interfere with any of the activities likely to be entered into during the school years. Therefore, I define marginal refractive errors; I do not prescribe lenses for such errors and I confess that I have often disregarded lenses when the errors are even greater than those mentioned. Such methods must be tempered occasionally for the young engineer for example who must read slide rules and micrometer settings with the best possible vision.

These corrections can be disregarded only in intelligent people. They are having some discomfort or they would not present themselves for examination and they can be made comfortable only if they have two things settled; first, conjunctival irritation such as wind, dust, pollen, etc.; and second, worries. I have found that most people have the fear that reading or close work is injurious so they come for glasses because they are students or stenographers. It must be proved to them that near work is not injurious. It must also be proved that the eye is not "saved" by glasses as the optometrist would have people believe. Light worries many people,

producing symptoms which actually can be largely eliminated by showing that light is not injurious in any quantity.

In any discussion of this subject I have heard the reports of case after case where marginal lenses have given relief of symptoms. I grant this, because the patient has faith in them and they relieve his fears; but this is negative evidence and does not prove the lenses necessary if the same patient can be made perfectly comfortable without the lens. I state positively that this can be done if the patient can understand the principles involved, and if care is taken to explain them.

THE MANAGEMENT OF GLAUCOMA*

T. L. McKEE, M.D., Keokuk

For convenience of discussion, glaucoma will be divided into first, acute congestive glaucoma; and second, chronic glaucoma.

ACUTE CONGESTIVE GLAUCOMA

When a case of acute congestive glaucoma is placed under one's care, an attempt to lower the tension by medical therapy should be made. Physostigmine, one-half to one per cent solution, should be instilled every one to two hours. Morphine or some other appropriate drug should be administered for the pain. Purgatives should be given. If the tension has not been substantially reduced in twelve to twenty-four hours, epinephrine or one of its derivatives should be tried. The method of Gradle[1] has been found to be very satisfactory. Epinephrine hydrochloride 1-1000 (0.25 to 0.3 of a cubic centimeter) is dropped on a small cotton pledget and placed in the upper cul-de-sac after the conjunctival sac has been anesthetized. Epinephrine and its derivatives are much less effective in reducing the tension in acute glaucoma than in chronic glaucoma. The reduction in tension from epinephrine will occur in two to five hours. If the tension still remains high, hypertonic saline (20 to 50 cubic centimeters of a 30 per cent solution) should be given intravenously. One can usually determine how effective medical treatment will be in a given case within thirty-six to forty-eight hours. If the acute attack is subsiding, the case should be carried along under the plan outlined above until the eye is quiet. Then a careful study of the case should be made and further treatment carried out as described later in this paper under chronic glaucoma. If the acute attack has not begun to subside in thirty-six to forty-eight hours, some surgical procedure is indicated.

Surgery: All of us have been disappointed with local anesthetics in these acute cases. The use of retrobulbar injection is very helpful. This not only improves the anesthesia, but often lowers the tension a substantial amount in a few minutes. The reduction in tension is due to the epinephrine. From one to two cubic centimeters of a two per cent procaine solution with epinephrine is injected 2.5 to 3.5 centimeters deep within the muscle cone. If this does not produce satisfactory anesthesia, it is wise to use some general anesthetic. Ethylene or nitrous oxide are perhaps the most satisfactory if available; if not, ether can be used.

In cases with tension above fifty, the advisability of a posterior sclerotomy should be considered. This is especially true if the anterior chamber is very shallow, or in cases with arterial hypertension. The danger of expulsive intraocular hemorrhage is very real in these cases. After posterior sclerotomy, the acute attack usually subsides and the appropriate operation can then be done. Iridectomy is the operation of choice in most cases. It is not effective unless it extends to the root of the iris. The width of the iridectomy is probably not important if it extends to the root of the iris. It is reasonable to assume that peripheral anterior synechiae are not present and that an iridectomy can be extended to the root of the iris: first, when there is little or no previous history of glaucoma; second, when the fellow eye does not show signs of chronic glaucoma; and third, when the acute attack has not lasted more than a few days.

The outlook is more unfavorable in cases with peripheral anterior synechiae. In cases with tension below forty-five, a trephine, or a Lagrange operation may be done. In cases with higher tension, a posterior sclerotomy may be done and then some filtering operation performed later. Good results for this type of case have been reported by Jervey.[2] He makes a scleral incision 2.5 millimeters from the limbus introduces a spatula into the anterior chamber to free the anterior synechiae and then does an iridectomy.

In most cases the acute attack subsides promptly after the operative procedure. The case should be carefully studied later. The further management of the case will be described later in this paper under chronic glaucoma. If other operative interference is indicated later, it may be carried out in another quadrant of the eye.

CHRONIC GLAUCOMA

A great responsibility rests with both the patient and the physician in chronic glaucoma. Before any treatment has been outlined to the patient, the nature of the disease should be carefully explained. It is hard to determine how much to tell the patient. He must be told enough

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about the serious aspect so that he will realize the importance of supervision, and still not enough to make him "go to pieces." Each patient is an individual problem; therefore, his temperament and philosophy of life must be taken into consideration. We have all seen patients who fail to cooperate because they do not realize the seriousness of the condition, and those who give up in utter despair and "resign themselves to fate." The unfavorable effect of worry and emotional stress upon the disease should be taken into consideration.

Visual Fields.

Peripheral Field: The peripheral field should be taken with different sized test objects. A decrease in the size of the peripheral field as compared with a previous examination usually shows up earlier with a small test object than with a larger one. The smallest test object to use in an individual case is the smallest one that particular patient can see easily. Little information of value has been secured by the author from the use of colored test objects in glaucoma. It is true that both the size and shape of the peripheral field are different with white and colored test objects, but these variations can be brought out by the use of different sized white test objects in a shorter period of time.

Central Field: A study of the central field is more important than a study of the peripheral field in most cases. Both the tangent screen and the stereocampimeter give good results. The use of various sized test objects is even more important for central field studies than for peripheral field studies. Seidel's scotoma will often be absent with a large test object but present with a small one. In early glaucoma simplex Seidel's scotoma is not infrequently the only indication of the disease.

Angioscotometry: The use of angioscotometry, as described by Evans[3], has been found to be very useful by the author. The larger vessels in the normal eye can be readily mapped if small enough test objects are used. The Lloyd sterocampimeter is used. Test objects 0.25 to one millimeter in diameter should be at hand. The smallest one that can be clearly seen by the patient should be used. The blind spot is first plotted and then one of the larger vessels above or below the disc. The test object must be moved at right angles to the blood vessel. In this way one may find scotomas extending from the blind spot which are missed by the usual central field study. A patient can be mapped in less than fifteen minutes. As with other central field studies, the most useful information gained from angioscotometry is the change which occurs from time to time in an individual case. Helpful knowledge about the effect of miotics is obtained if the vessels are mapped before and then a few hours after a miotic is used. One is often agreeably surprised by the decrease in the size of the scotoma after the miotic is used. Changes in the field, particularly changes in the central field, are probably the best indication of the progress of a particular case.

The Tension.

Fuchs[4] and many other observers agree that twenty-six is the upper limit of normal tension. In the normal eye, the tension is highest between 5:00 a. m. and 7:00 a. m., then falls until the lowest point is reached in the evening, at which time it begins to rise. The glaucomatous eye has a similar variation, but the amount of rise and fall is greater. For this reason, in studying cases that have tension near the upper limits of normal, the tension should be taken at intervals during the day. The tendency of caffeine to raise the tension in some patients is well known. If the patient has had coffee or tea a short time before the tension is taken, this should be taken into consideration.

Medical Therapy.

Miotics: The miotics deserve first rank in the medical treatment of chronic glaucoma. Pilocarpine hydrochloride or nitrate is used in 0.5 to three per cent solution every three to six hours, as the case requires. The weakest solution which controls the tension should be used. The tension should be taken at intervals after the pilocarpine is instilled to determine the proper interval between instillations. As a rule, the strength of the solution must be increased from time to time in an individual case. Pilocarpine ointment, one or two per cent, is helpful just before retiring. Physostigmine sulfate or salycilate is used in 0.2 to 0.5 per cent solutions. Its action is stronger than that of pilocarpine. Many observers feel that long continued physostigmine therapy is detrimental to the eye, and that it should be used only for short periods. Both pilocarpine and physostigmine may cause a dermatitis of the lids if used over a period of time. Physostigmine causes the dermatitis in a shorter period, as a rule. If the dermatitis follows the use of pilocarpine, it will usually subside in a few days if the patient is given physostigmine, and vice versa. Many cases can be carried along for years by the proper use of miotics. Each case must be kept under supervision and changes in the tension and fields noted.

Epinephrine: Of the newer therapeutic agents,

epinephrine and its derivatives are the most useful. Wessely was the first to note the fall in intra-ocular tension caused by epinephrine. Hamburger has probably done more than anyone else to bring the use of epinephrine and its derivatives to the attention of the profession. The possibility of acute glaucoma following the use of epinephrine must be kept in mind. For this reason, the patient should be kept under observation for one or two hours after the first treatment with it. This complication is apparently very infrequent. Epinephrine or its derivatives dilate the pupil widely in about thirty minutes. The tension rises or remains the same for one to three hours, and then begins to fall, reaching the lowest point in twenty-four hours. The pupil returns to normal in one to three days. Tension remains low for a variable period, from a few days to several weeks. Among the many epinephrine preparations, some of the most useful will be listed:

1. Epinephrine Hydrochloride 1-1000 produces maximum results when it is injected subconjunctivally. Systemic reactions of palpitation, weakness, and in rare cases, collapse, may occur. They are usually transitory, however. A pledget of cotton saturated with it may be placed in the upper cul-de-sac. Nearly as much effect can be obtained by this method and systemic symptoms are less frequent. The 1-100 solution of epinephrine hydrochloride is effective when instilled in the conjunctival sac.

2. Glaukosan has been advocated by Hamburger[5]. It must be injected. Links-Glaukosan is effective when instilled. Both these preparations are unstable.

3. Epinephrine bitartrate in powered form is distributed in ampules. The powder may be placed in the conjunctival sac or a one or two per cent solution prepared for instillation. However, the solution is unstable; hence the powder is probably the most satisfactory form. An ointment, one or two per cent solution, has been prepared. The drug is said to be stable when made into an ointment. In some cases which are no longer controlled by miotics, the use of epinephrine or one of its derivatives will lower the tension to normal and then the miotics will keep it down. Usually this must be repeated in a relatively short time and when this is true, some surgical procedure should be advised. When surgery must be postponed, due to the general condition of the patient, these preparations are very useful in maintaining a normal tension during this period. If surgery is contraindicated, due to the age or poor physical condition of the patient, these preparations are likewise beneficial.

4. Other drugs which have been recommended are adrenal cortex and ergotamine tartrate. They are given hypodermically. The author has had no experience with them, and reports of different observers disagree as to their value.

Operative Indications.

1. Cases in which the tension cannot be kept within normal limits by medical management.

2. Cases in which peripheral or central field studies show that the disease is progressing. (Changes in scotomas are probably the best indication of the progress of the disease.)

3. Cases that are unwilling or unable to follow proper medical management.

Classification of Surgical Procedures.

No attempt has been made to list all operative procedures. Only the more common procedures are included in the following classification:

I. Operations to increase normal intra-ocular drainage:
   A. Iridectomy.
   B. Scleral posterior iridectomy, introduced by Jervey[2].
   C. Trabeculotomy, introduced by Barkan[6].

II. Operations to establish new channels of intra-ocular drainage: Cyclodialysis.

III. Operations to promote new channels of extra-ocular drainage:
   A. Lagrange operation.
   B. Iris inclusion operations.
      1. Iridotasis.
      2. Iridencleisis.
   C. Sclerocorneal trephining.

IV. Combination operations: Cyclodialysis combined with iridectomy, introduced by Wootton[7] and Wheeler[8].

Every attempt should be made to reduce the tension to forty or lower. If this cannot be accomplished, a retrobulbar injection should be made before the operation is done. This may lower the tension as well as improve the anesthetic.

Iridectomy is very satisfactory for early cases of the chronic congestive type. In cases of longer standing, some filtering operation is the most suitable. The Lagrange operation and the trephinement are the most popular in this country at present, but the iris inclusion operations seem to be increasing in popularity in recent years. The author prefers sclerocorneal trephining in the average case. Technically, it is the easiest to perform and the results are usually satisfactory. A great deal is written about late infections following filtering operations, particularly after sclerocorneal trephining. Recent surveys indicate that they are

less frequent than was formerly supposed. In glaucoma simplex, cyclodialysis has been very popular in several of the European clinics. It has been used very little in this country, but in recent years it has several advocates in America. Apparently, it is more suitable for eyes with tension below forty than in eyes with higher tension. It can be done two or three times in different quadrants of the same eye. If the tension later becomes increased, some filtering operation can be performed. The same filtering operations are used in glaucoma simplex as in chronic congestive glaucoma. Barkan's[6] reports of trabeculotomy are very encouraging. It is only suitable in cases of glaucoma simplex with an open anterior chamber angle. This may prove to be the operation of choice in the future for this type of case. Wootton[7] and Wheeler[8] report fairly good results of the combined cyclodialysis-iridectomy operation in cases which did not respond to filtering operations.

The advisability of mydriatics or miotics, postoperatively, seems to be a controversial question. The author, while a resident physician, observed many cases which ran an uneventful postoperative course with and without either miotics or mydriatics. It seems most logical to use neither until the first postoperative day. Then, if evidences of iritis are found, atropine should be used; if not, and the tension is increased, miotics may be in order. Massage of the eye after filtering operations is important, especially if there is a blockage of filtration. However, if the tension is found to be subnormal, massage should be discontinued until the tension again reaches normal.

Glaucoma in Aphakia.

Increased tension following a cataract operation is often very difficult to control. Epinephrine or one of its derivatives should be given a trial and if the tension can be fairly well controlled in this manner, should be continued with the hope that the normal channels of absorption will be reëstablished later. Miotics, as a rule, are ineffective. If the tension remains high, cyclodialysis should be done, since it apparently is the most satisfactory operative procedure. All too frequently the tension remains elevated in spite of all treatment.

Secondary Glaucoma.

Treatment should be directed to the condition causing the increased tension. When iris bombée is found to be present, a communication should be established between the anterior and posterior chamber by transfixion of the iris or iridectomy. Increased tension, after needling of a soft cataract, can be controlled by epinephrine in some cases, until enough absorption has occurred to relieve the tension. In other cases, it is necessary to make a corneal incision and irrigate out some of the soft lens. Cases of iritis or cyclitis which develop increased tension are often greatly benefited by the use of epinephrine or its derivatives. They help to keep the pupil dilated as well as to reduce the tension. They are perhaps more useful in this type of case than in any other.

SUMMARY

1. Many early cases of chronic glaucoma can be controlled for years by the use of miotics.

2. Epinephrine and its derivatives are valuable adjuncts in the treatment of certain types of cases.

3. Changes in the scotomas in the central field are the best indication of the progress of the disease.

4. Angioscotometry is very helpful in the study of the central field.

5. Iridectomy has stood the test of time and is still the procedure of choice in most cases of acute congestive glaucoma.

6. Cyclodialysis is useful in glaucoma simplex with rather low tension, and in glaucoma following cataract operations, (or in the aphakic eye). It probably should be selected more often than it is at present.

7. One of the filtering operations is most suitable in chronic congestive glaucoma and in many of the cases of glaucoma simplex.

8. Barkan's trabeculotomy may, in the future, be found the most suitable operation in selected cases of glaucoma simplex.

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Discussion

Dr. Jay C. Decker, Sioux City: Dr. McKee is to be complimented on the splendid way in which he has covered the recognized procedures used in the management of glaucoma. The medical and surgical management of the patient with glaucoma presents a distinctly individualized problem. I know of no other eye condition where there are so many different types or modifications of the disease, each requiring a different type or modification of treatment. This is what makes keen judgment the key to successful management of the case. It is well to keep

in mind that most cases sooner or later come to surgery of one type or other. Dr. McKee has covered thoroughly the treatment of the acute conjestive type.

There is, however, one other procedure which should be mentioned and that is paracentesis. This has much less possibility of dangerous complications than posterior sclerotomy. It is done with local anesthesia, two or three minims of two per cent butyn being injected at the site of fixation and puncture. A narrow knife is used, the puncture is made subconjunctivally and the aqueous solution released slowly. This is followed by miosis which can often be maintained with miotics until the acute attack has subsided. If iris bombée is present, puncture of the iris is done at the same time.

I believe hypertonic solutions, either thirty per cent saline or thirty per cent glucose intravenously, should be used more often in the acute stage. This may be supplemented to an advantage by the saline cathartic, which not only reduces the tension, but permits better effect of any local anesthesia used. The hypertonic saline solution should not be used in the presence of a nephritis, which leads me to say that every patient with glaucoma should have a thorough physical examination in an effort to remove any contributing cause.

I can heartily sanction Dr. McKee's stressing the value of repeated field studies as the surest indication of the progress of the disease. As to operative treatment I think the essayist has very well outlined the indications for the various procedures. I would especially recommend cyclodialysis as the operation of choice in cases of increased tension following cataract extraction. A word of caution should be said in regard to intra-ocular tumors; if they are diagnosed late there is always an increased tension, and in such cases if the media is opaque and one is unable to see into the eye the only safe rule is to enucleate.

LYMPHOCYTIC CHORIOMENINGITIS IN IOWA

W. H. PRESNELL, M.D., Charlotte

The patient, a white boy eleven years of age, is the fourth in a family of five children. His next older sister has a decompensated heart subsequent to rheumatic fever. The parents and remaining children are in good health.

His past medical history is unimportant. An injury in 1935 necessitated the removal of a portion of the right index finger. Another injury in 1936 was diagnosed as separation of the lower epiphysis of the left tibia. During the month of July, 1938, he had been plentifully bitten by mosquitos which were infesting this region at that time. During the same month many cases of equine encephalomyelitis had occurred on the farms of the two townships next adjacent to the patient's home in Clinton County.

On August 5, 1938, the boy complained of headache and malaise. These symptoms continued through the following day, but that evening he felt sufficiently well to ride twenty miles to a movie. He ate ice cream and offered no complaints. On August 7 he slept until noon, ate dinner and went to a neighboring farm to play, but did not play as actively as usual. That night his headache returned with increased intensity, and he vomited. The headache persisted through the next day, and he vomited again about 3:00 A. M the following morning, after being given an aspirin tablet. A physic did not relieve the symptoms. He stayed in bed, but was not drowsy at any time. There were no chills or cough. He seemed "feverish," but his temperature was not taken.

When first seen, about 10:00 o'clock the morning of August 9, he had a temperature of 102 degrees, pulse 120, and respirations 20. The face was flushed, and the expression rather anxious. An examination of the eyes, ears, nose and throat showed nothing more remarkable than hypertrophied tonsils. His neck was moderately stiff to active and passive motion; his back markedly so. Kernig's sign was negative. The heart and lungs were normal; the abdomen not remarkable. While en route to Clinton he complained of numbness of both hands. A lumbar puncture, done in Clinton, gave fluid under increased pressure (not measured) which was suggestive of "ground glass" appearance. The cell count, all lymphocytes, was 340. No further examination of the fluid was made. Almost immediately after the lumbar puncture he went into a tonic convulsion, which lasted about one minute, during which time his face was cyanotic, his eyes rolled upward, with the head retracted, the body stiff, and his breathing stertorous.

The illness was diagnosed as preparalytic poliomyelitis, and the patient was taken to the University Hospital at Iowa City. The following excerpts are quoted from his hospital record.

"Physical Examination. The head is held straight and he does not like to have it moved. Reflexes: The abdominals are present and active; B.J., 1 plus/1 plus; T.J., 1 plus/1 plus; K.J., 3 plus/1 plus; T.A., 2 plus/2 plus; A.C., 0/0; Babinski, 0/0. Patient had a convulsion while being examined, which consisted at first of clonic movements and then a tonic seizure. Eyes rolled upward and fixed; stiffened out with head somewhat in hyperextention. He was not incontinent, and there was no aura or cry.

"Impression. Possible polioencephalitis; possible meningitis.

"Laboratory Examination. The urine was negative. The blood examination showed a red blood count of 4,500,000; a white blood count of 9,880, 85 per cent polymorphonuclears; and hemoglobin, 12 milligrams. TBC intradermal tests were both negative. Blood and spinal fluid Wassermann tests were both negative. The spinal fluid on August 9 was clear, no globulin, no Myers, 418 cells, mostly lymphocytes, eight millimeters of mercury pressure. On August 11, there were 319 cells, all lymphocytes. On August 27, there were only three cells, lymphocytes. The spinal fluid was cultered, but there was no growth. SF sugar was 42 mgm/100, protein was 26.2 mgm/100.

"Diagnosis. Encephalitis."

The treatment consisted of intravenous fluids and bed rest. The patient returned home from the hospital on August 27, and has been in good health to date. At the suggestion of Dr. Carl F. Jordan of the State Department of Health that this might be a case of lymphocytic choriomeningitis, and to lay the ghost of a possible case of human encephalomyelitis, eight cubic centimeters of the patient's blood were taken on October 5 for neutralization tests. The serum was sent to the National Institute of Health. A letter from Dr. R. E. Dyer of the United States Public Health Service, under date of November 9, states that "this serum was positive for antibodies capable of neutralizing the virus of lymphocytic choriomeningitis."

CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

Hospital Staff Meeting of November 22, 1938

FLUIDS FOR INTRAVENOUS AND SUBCUTANEOUS USE

R. B. Gibson, Ph.D., Iowa City
Pathologic Chemistry Laboratory,
Department of Biochemistry

Some idea of the extent to which intravenous solutions are employed for therapeutic purposes in this hospital may be obtained from the following figures. The Intravenous Laboratory last month (November) dispensed 3,163 flasks (800 cubic centimeters) of normal saline, 2,959 flasks (100 cubic centimeters) of 50 per cent glucose, 884 flasks (800 cubic centimeters) of distilled water, 120 flasks (800 cubic centimeters) of one-third molar sodium lactate and Ringer's solution, 120 flasks of three per cent sodium citrate (for transfusion) and 88 flasks of miscellaneous preparations including 50 per cent sucrose and five and ten per cent sodium chloride solutions. The composition of these fluids, the physiologic basis for use, and the selection of the proper solution are briefly discussed.

So-called normal or physiologic salt solutions must have the same osmotic pressure as the blood, tissue cells and body fluids (lymph, cerebrospinal fluid). Isotonic solutions are made to contain a little over one-eighth molar to one-fourth molar equivalents, depending on the ionization of the substance used. Ringer's solution which contains small amounts of calcium and potassium ions, and to which 0.1 to 0.25 per cent of glucose and a little buffer salt have been added, is more physiologic than normal saline. Both lack colloids which are non-diffusable and hydrophilic and are essential in retaining fluid within the vascular system. The plasma protein exerts a part of the total osmotic pressure. A diffusion equilibrium exists between the blood, lymph, and tissue cells, and alteration of the normal conditions results in profound changes in the water distribution.

It follows that normal saline or Ringer's solution is a temporary measure in the treatment of shock from hemorrhage; blood transfusion is indicated. Gum acacia solution has been given with the saline and is effective, but is deposited in the liver after a few hours and results in definite hepatic injury. Normal salt solutions are efficient alone in simple dehydrations such as acute diarrhea, cholera, heat prostration, and extensive superficial burns. In the dehydration due to vomiting, especially in high intestinal obstruction or pyloric stenosis, saline intravenously not only replaces the water loss, but facilitates a return of the normal acid-base balance by the elimination of sodium bicarbonate in the urine.

Isotonic (five per cent) or hypertonic (ten per cent) glucose solution should be administered intravenously with or without saline according to the effect on water balance and distribution desired. For use, the 50 per cent glucose is mixed with saline or distilled water when given. When edema is present, in chronic nephritis and cardiac failure, glucose in water solution should be employed. The glucose is oxidized or converted into glycogen. The water is promptly eliminated by the kidneys, there being little or no retention of it, as edema fluid, in the absence of sodium chloride. As an intravenous nutrient in starvation or diabetic ketosis, in acute alcoholic intoxication, et cetera, it should be given mixed with saline. Glucose saline may be better than saline alone in the treatment of extensive superficial burns, in preventing the development of toxic hepatitis and nephritis. The administration of glucose in hepatic disease is routine. Preoperative glucose and saline with adequate insulin should be given all diabetic patients. Intravenous glucose in saline be-

fore thyroidectomies would be in accord with recent work on the nature of postoperative thyroid crises.

A one-sixth molar solution of sodium lactate with added Ringer's solution administered intravenously is advocated by Hartmann, especially for nephritic acidosis and diabetic or other ketoses. The lactic acid is utilized by the tissues, especially the heart, or converted into glycogen in the liver. The sodium ion becomes sodium bicarbonate, thus increasing the alkalinity of the blood and tissues, and the lactic acid is antiketogenic and ketolytic. The solution prepared according to Hartmann is not sufficiently concentrated to provide an adequate amount of lactate. We have used a one-third molar solution with Ringer's solution, giving the mixture slowly and controlling the blood alkalinity by alkali reserve tests.

Severe insulin hypoglycemic shock should be treated by injecting intravenously 25 to 50 cubic centimeters of 50 per cent glucose solution intravenously with a large hypodermic syringe. The injection should be made slowly.

Hypertonic solutions are used for cranial decompression. A 50 per cent sucrose solution is the most satisfactory. Sodium chloride solutions cause subsequent water retention, glucose is rapidly converted into glycogen, but sucrose is eliminated by the kidneys and the resulting diuresis may be helpful.

Gum acacia solutions have been used in conditions in which edema is associated with low plasma protein levels, as in nephrosis and in nutritional edema. Subsequent untoward effects have already been mentioned. Reports are appearing in the literature of the injection of compatible ascitic fluid to restore the plasma protein level in hemorrhagic shock. The use of such material to bring the plasma protein to a normal figure should prove an efficient therapeutic measure in edema.

BLOOD TRANSFUSION REACTIONS

ELMER L. DEGOWIN, M.D., Iowa City
Department of Internal Medicine

Transfusion reactions can be arbitrarily divided into several categories which are tabulated in the accompanying table. Hemolytic reaction is the most frequent cause of death in our series of 4,500 transfusions at the University Hospitals. The majority of the deaths from these reactions occur because anuria develops. Since 1933 we have had nine patients with transfusion anuria; of these, seven died and two recovered. It must be emphasized that the transfusion of incompatible blood is not the only cause of hemolysis. Small amounts of soap, acids or other impurities in the transfusion apparatus may account for some instances of hemolysis. No efficacious treatment is known for transfusion anuria once it has developed, but alkalinization of the urine by feeding sodium bicarbonate to the patient prior to transfusion may serve to prevent renal damage. Some of the types of therapy attempted for transfusion anuria are the intravenous administration of hypertonic solutions, diathermy to kidney regions, roentgen irradiation, irrigation of renal pelves with hot water, and spinal anesthesia. Decapsulation of the kidneys has not been attempted here, although it has been reported as successful in some cases.

In our experience the only other fatalities from transfusions have been in two patients who devel-

TYPES	CAUSES	PROPHYLAXIS	CLINICAL SIGNS
HEMOLYSIS	Hemolysis Distilled water, soap, et cetera Trauma to red blood cells	Proper cross-matching; care in manipulation; alkalinization of urine	Hemoglobinuria Jaundice Anuria
PULMONARY EDEMA	Overburdening of pulmonary circulation; other unknown factors	Incipient cardiac failure and advanced uremia are contraindications	Dyspnea Cyanosis
EMBOLISM	Agglutinins Fibrin clots Air	Proper cross-matching; filtering of blood; use of proper anti-coagulant; avoid addition of calcium	Signs of embolism
ALLERGY	Allergy in donor Allergy in recipient	Allergic histories from donor and recipient	Urticaria Angioneurotic edema Asthma
FEBRILE	Foreign protein substances from rubber Other unknown factors	Absolute chemical and bacteriologic cleanliness of apparatus	Chills and fever
TRANSMISSION OF DISEASE	Syphilis Malaria Other bacteremias	Wassermann and Kline tests for donors; blood examinations for malaria	

oped edema of the lungs during transfusion. This was not due to the use of incompatible blood. The administration of atropine was ineffectual. Venesection should be worthy of trial if another such reaction occurs.

We have observed no transfusions where embolism occurred.

The so-called allergic reactions are interesting. Occasionally recipients develop urticaria for no apparent reason. One donor, who himself had angioneurotic edema on several occasions, has been studied and his blood produced similar symptoms in at least three recipients. An allergic history should be obtained from both donor and recipient prior to transfusion.

Febrile reactions are the most common complications of blood transfusion and are usually not serious. The treatment is symptomatic.

PATHOLOGY OF BLOOD TRANSFUSION REACTIONS

E. D. Warner, M.D., Iowa City
Department of Pathology

There are two main types of fatal transfusion reactions: hemolysis causing death from urinary suppression and uremia, and rapidly fatal, severe, pulmonary edema. In the second type no significant findings are present at autopsy aside from the pulmonary edema, the mechanism of production of which is not understood. In the first type, for practical purposes, the significant lesions are limited to the kidneys. The only extrarenal lesion described is the occasional focal necrosis found in the liver, but this is never extensive.

The syndrome of urinary suppression with fatal uremia developing over a period of five to ten days can be produced in dogs by the intravenous injection of hemoglobin, provided the urine is acid in reaction at the time of the injection. If the urine is alkaline, the animals tolerate repeated injections of hemoglobin without harm. The renal lesions produced in the animals are well-developed and serve to illustrate the type lesions found in the human cases. There are two apparently independent mechanisms producing the renal insufficiency, and although either may be sufficient to cause death, they act generally in combination. The first, and usually the most conspicuous, is the precipitation of hemoglobin debris in the renal tubules with the formation of casts which block the tubules mechanically. The accumulation of these casts is most marked in Henle's loop. It is of interest that, at least in lower forms such as the amphibia, it is in the region of Henle's loop that the urine first becomes acid in its passage down the tubule, and that hemoglobin is precipitated from solution by reducing the *p*H to a value commonly found in acid urine. It is probable that the acid precipitation of excreted hemoglobin with tubular obstruction is the mechanism for this type lesion. The second mechanism is of a nephrotoxic type with necrosis of renal epithelium. This, in common with most types of toxic renal injury, is most marked in the convoluted tubules. The glomeruli are anatomically normal.

Both types of renal lesions are found in human beings, but they are less well developed than those which we have produced in dogs. It should be pointed out, however, that the amount of hemoglobin injected in the dogs was considerably greater than that ordinarily given in human transfusions even though all of the transfused blood cells become hemolyzed. This may account, at least in part, for quantitative differences in the experimental lesions and those seen in human beings. In the human body the most characteristic lesion is the formation of casts of hemoglobin debris. It does not, however, in most cases, appear sufficiently extensive to be responsible alone for the fatal uremia. Necrosis of tubular epithelium with mild inflammatory reaction and interstitial edema is present in the majority of the patients studied, but again this nephrotoxic type lesion is not extensive as a rule. We are forced to the assumption that the physiologic disturbance is greater than the anatomic change would indicate.

Discussion

Dr. H. P. Smith: I think a point worth emphasizing is that one sometimes sees reactions when the amount of hemolysis is rather trifling. Other patients show considerable hemolysis with no harm from it. The alkalinity of urine is one of the important variables and because of the extreme importance of this subject, Dr. DeGowin is continuing to search for other variables.

Dr. A. W. Bennett: I can remember back in 1918 when a transfusion was a major operation. I remember Dr. Rohner and I observed reactions which we could not explain. At that time we used large transfusions, often as much as 1,000 cubic centimeters, and thus transfusions were more or less of a major procedure. A number of reactions could not be explained even when we rechecked the donor and recipient and found them to be perfectly grouped. I well remember the cross matchings and discussions that arose. Then followed attention to the detail of the glassware and tubing to prevent coagulation. I believe transfusion to be a most important agent in therapeutics, and one cannot spend too much time or work to make it safe. I did not realize that the mortality rate is as high as has been reported this afternoon. Factors overlooked in the past have proved to be very important things.

Dr. R. Hardin: Should fevers twenty-four to

forty-eight hours after transfusion be classified with other reactions?

Dr. Elmer DeGowin: Yes.

Dr. R. Flocks: The question of alkalinization of the urine prior to blood transfusion has impressed those of us in the Department of Urology since Dr. DeGowin first emphasized it in 1935. Urinary antiseptics such as mandelic acid and ammonium nitrate, so commonly used in recent years, depend upon the necessity of acidification of the urine. Obviously this is the worst possible combination of circumstances. Moreover, many of the common, urinary tract, infectious organisms produce an alkaline reaction so that although the actual urine coming through the kidney is acid, the urine obtained from the bladder is alkaline. This may mislead one in consideration of the therapy necessary previous to the administration of a blood transfusion. For this reason it is important, before administering a blood transfusion, to consider the general condition of the patient, the question of acid medication and the possibility of alkaline types of infection in the urinary bladder. Many times the study of alkali reserve of the blood and the renal function may aid us in making an evaluation of the safety of transfusion.

Dr. Nomland: I have been here for some time, but I should like to ask what are the indications for transfusion?

Dr. E. DeGowin: I refer you to the first experimental work by Blundell of one hundred years ago. At that time transfusions were given for insanity, change of religion and everything else. Blundell had patients who died of uterine hemorrhage, one after another; he showed that hemorrhage was the primary indication for transfusion, and I think that still holds. The use of blood for combating infection and for treating blood dyscrasias are more modern, but secondary indications.

THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

INFECTIOUS MONONUCLEOSIS

WALTER CARY, M.D., Dubuque

What may seem like a simple, uninteresting illness, may, on analysis, prove to be something well worth noting. The case I wish to present was of such a type. Doubtless many similar diseases have escaped attention in the past and will do so in the future.

CASE REPORT

A pupil nurse was admitted to the hospital March 11, 1935, complaining of "aching all over" and a fever. Her family and past history were unimportant except that on February 28 she had been in the hospital because of a sore throat. She claimed she felt well from then until the admission on March 11. She worked all day but did not feel quite right the day before she came in. Her only complaint was the general aching and the fever. She denied any sore throat, and showed no signs of a cold. There were no painful joints. There were no stomach or gastro-intestinal symptoms, and no abdominal tenderness.

On physical examination her tonsils seemed large but not as large as on the previous admission. No evidence of acute throat infection could be seen nor was there any rhinitis. The cervical glands were not enlarged. Her temperature was 99.4 degrees and was no higher for four days when it rose to 101 degrees. There was no rash, and all other physical signs were negative. Two days after admission the postcervical glands were palpable and those on the left side of the neck were slightly tender. On March 16 the tonsils were larger than on admission, especially on the left side. They were also slightly inflamed and the left postcervical glands were larger. By March 18 the postcervical glands on the left side were about the size of hazel nuts and still tender. On the right side of the neck the glands were palpable but not as large nor as tender. The throat was unchanged. Otherwise the mouth was in good condition. The axillary glands were palpable but not tender. On March 20 her general condition was very good. The glands had not changed in size. They were no longer tender. She wanted to go to work, but her white blood count had jumped from 20,000 to 25,000. The next day it was down to 16,000.

On admission this girl had a white blood count of 12,300. Four days later, as her fever rose to 101 degrees the count rose to 16,700. The fever continued up to that height for several days and in three days the white blood count rose to 20,500. At this time a differential smear was made and showed 42 per cent polymorphonuclears, 26 per cent small lymphocytes, and 18 per cent mononuclear cells. The blood picture was considered characteristic of glandular fever and a diagnosis was made. The patient made an uneventful and complete recovery. She had no recurrence while in training.

DISCUSSION

Glandular fever or infectious mononucleosis is an acute infectious disease characterized by fever, enlargement of the lymphatic glands, changes in the blood cells, especially mononucleosis, the presence of heterophil antibodies in the serum, and a uniformly favorable prognosis. The earliest reports described it as a disease of childhood, but no age is immune.

Discovery of the disease is comparatively recent

because attacks are for the most part rather mild and easily confused with influenza, tonsillitis or other mild ailments, and also because to discover the condition it is necessary to make blood smears not ordinarily made in a mild illness. The first efficient description of the condition was by Pfeiffer at a congress of pediatricians in 1889. He reported cases in children of the simple glandular type of cervical infection. In discussing his paper, several other physicians reported the same type of cervical glandular infection. During the next few years various other authors reported the same type of illness involving other glands. Among them was a large epidemic reported in this country by Park West in 1896. A year later Dawson Williams, later editor of the *British Medical Journal*, reported an epidemic in a London hospital. About this time there was a serious influenza epidemic and many felt that the adenitis was merely a manifestation of the influenza. By 1900 interest in glandular fever had waned and five years later the condition was practically forgotten. In 1908 Pfeiffer read another paper on the disease, but there was no discussion and apparently his observations evoked little interest. The condition virtually passed into oblivion until 1920 when Sprunt and Evans of Baltimore reported six cases, three of them in a mild epidemic, which showed the same peculiar symptoms and increase in mononuclear cells. They called it "infectious mononucleosis." Since that time it has been definitely recognized as a disease entity found in many countries.

Pfeiffer in his original work claimed the patients showed a little inflammation of the pharynx but no exudate. It is generally conceded now that there frequently is a membrane. When present it must be differentiated from a simple tonsillitis and diphtheria. The cases are easily overlooked because the accompanying cervical adenitis is assumed to come from an inflamed pharynx. The blood picture is the same whether an exudate is present or not. It has also been observed that many patients may have a rash which can be very similar to typhoid fever, or it may resemble German measles, chickenpox or any other exanthemata. For years it has been known that in whooping cough there is a definite increase in the mononuclear leukocytes. It was even taught that the only other condition giving an absolute lymphocytosis was lymphatic leukemia. To this must be added glandular fever. Diagnosis is made by the characteristic blood picture combined with the clinical picture of the patient. There are three clinical stages which can be recognized: first, the onset with fever and general malaise; second, the stage of eruption from the fourth to the tenth day; and third, the stage of glandular enlargement beginning on the tenth day. All cases progress to complete recovery.

Infectious mononucleosis has been reported in every part of the world. The degree of infectivity is not high, but susceptibility seems to be almost universal. The incubation period is most commonly between one and two weeks, but the limits may be much greater, possibly through carriers as in diphtheria. It has been reported in definite epidemics a number of times. The following three types of disease are now recognized:

Type 1, the glandular type, is most common in children and is rare after the age of twenty years. At the onset there may be a slight complaint of sore throat with discomfort in swallowing, but there is little to see in the throat beyond a reddening of the fauces. The degree of glandular enlargement is out of proportion to the pharyngeal involvement. The cervical glands are definitely enlarged and may become very large. Enlargement of the intrathoracic glands has been demonstrated by x-ray, and may cause a cough by pressure on the trachea. Suppuration of the lymphatic glands is very rare. A mild transient rash may be observed in this type. After one or two weeks the majority of the cases seem to have made a complete recovery except that the glands may continue to be palpable for months or even years.

Type 2, designated as monocytic angina, is less frequent. For a period of two to three weeks there are periodic symptoms with some complaint of the throat. A membrane forms on or near the tonsils which looks much like that of diphtheria. The cervical glands enlarge before the membrane forms and may become very tender. Edema may form in the mouth or the neck. The temperature rises, possibly to 104 degrees, but in spite of this, the patients are not as toxic as would be expected with diphtheria or scarlet fever. After a few days the membrane separates and recovery is soon complete.

Type 3 is the febrile type. Invasion starts suddenly with headache, fever and constitutional disturbance. A sore throat is rare. A rash develops on the fourth or fifth day but may be delayed to the tenth day or longer. The fever stays high for several days and then begins to drop by lysis. For a short period these patients may have positive Wassermann reactions. The cases resemble typhoid or influenza, but the specific reactions will, of course, be negative. About the end of the third week glandular enlargement begins, but is not marked. The temperature may rise again as the adenitis commences. The illness thus lengthens out to four weeks or more and may even last several months. Here again recovery is invariable.

Complications are rare. A small percentage of cases may show hematuria. Jaundice is rarely seen in children but may be found occasionally in adults. A benign type of meningitis with a lymphocytosis has been reported which may be a complication of glandular fever.

There is every reason to believe that the infection enters the system through the nose and mouth. The diagnosis is not considered difficult and can be made on the history, physical examination, clinical progress and serial leukocyte and differential counts. The differential count will sooner or later show both a relative and an absolute lymphocytosis and is important for that reason. Anemia is rare. The blood smears also show the so-called abnormal lymphocytes in the peripheral circulation. Many of the nuclei are indented or kidney shaped, or they are eccentrically located and show chromatic structures with vacuoles.

Another laboratory test, a serum test, is now available, based on the phenomenon that heterophil bodies are present in the blood of glandular fever patients. The test is diagnostic after the fourth day of disease and extends to about the sixth week or longer. A positive reaction of one in 64 may be considered proof of glandular fever.

As hinted above, the blood picture may change in the progress of the disease. The explanation is fairly simple. Hematologists fail to agree as to whether the mononuclear cells are lymphocytes from lymphoid tissue or monocytes from reticulo-endothelial tissue. Both types of tissue are affected and both types of cells appear in the blood. It is, therefore, incorrect to describe the changes as "lymphocytosis" except for convenience. The virus seems to affect all leukocyte-forming tissues, myeloid, lymphoid, and reticulo-endothelial. The myeloid tissue reacts first and is an outpouring of myeloid cells into the circulation, producing an absolute and relative polynucleosis. After a day or two the polynuclear cells begin to fall and return to normal in about four or five days. It is not rare to see a drop in the polynuclear cells at the start in the febrile type of disease. Where this is found, the count soon returns to near normal. As the polynuclear cells approach normal, the mononuclear forms begin to increase. It may be said in general that the mononucleosis commences at about the time the enlargement of the peripheral glands is recognizable. It must be borne in mind that the development of mononucleosis may overlap a polynucleosis or a polynucleopenia. There is no constant blood count in glandular fever and the number of leukocytes and relative percentages may vary with extraordinary rapidity.

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TULAREMIA EPIDEMIC IN IOWA

More than five times as many cases of tularemia were reported to the State Department of Health in November and December, 1938, than in any previous year on record. The distribution by counties, of one hundred cases of tularemia thus far officially reported, is as follows: Appanoose, twenty-two; Black Hawk, one; Clarke, one; Clinton, two; Dallas, one; Davis, five; Decatur, five; Des Moines, seven; Henry, two; Iowa, one; Jefferson, one; Johnson, one; Keokuk, one; Lee, nine; Louisa, four; Lucas, four; Mahaska, one; Marion, three; Marshall, two; Monroe, two; Muscatine, two; Polk, seven; Ringgold, one; Scott, four; Van Buren, one; Wapello, four; Warren, two; Washington, three, and Wayne, one.

It is likely that many cases have occurred that did not receive medical care and were not reported to the local health officer or local board of health and to the State Department of Health. It is noteworthy in the above list of counties that, with the exception of Black Hawk county, no cases have been reported in the northern half of the state.

Symptoms and signs of tularmeia, as indicated on case records returned by attending physicians, include fever, chills, headache, vomiting, general malaise, ulcer formation (usually on the hand or finger), with marked swelling of regional lymph glands. The agglutination test is not often positive until about two weeks following onset of illness and should be repeated if necessary.

ANNUAL MEETING IN APRIL

The attention of our members is again directed to the fact that the Annual Session of the Iowa State Medical Society will be held early this year, because of the American Medical Association annual meeting in St. Louis in May. Plan now to attend the Eighty-eighth Annual Session of your state society in Des Moines, April 25, 26 and 27. Remember, also, that these dates fall on Tuesday, Wednesday and Thursday, instead of our accustomed ones.

State Department of Health

Walter L. Bierring

Increased Interest in Typing of the Pneumonias

Pneumococcus Study Course.

The Pneumococcus Study Course, announced in the December number of the Journal, page 627, was carried out at the State Hygienic Laboratory, Iowa City, December 7 to 9 and December 14 to 16. The groups comprising the two sessions totaled seventy persons, including fifty hospital and other laboratory workers from thirty-two counties, and twenty attending physicians and health officials representing thirty-eight counties of the state.

The course was conducted by M. E. Barnes, M.D., Director, State Hygienic Laboratory, and he was assisted by I. H. Borts, M.D., Associate Director and R. H. Heeren, M.D., Assistant Professor, Department of Hygiene and Preventive Medicine.

"The Program of the Iowa State Department of Health for the Control of the Pneumonias," was presented by Walter L. Bierring, M.D., State Health Commissioner. Fred M. Smith, M.D., Head of the Department of Internal Medicine, State University of Iowa, spoke at both sessions on the subject, "Problems Involved in the Diagnosis and Treatment of Pneumonia." Dr. Barnes discussed the epidemiologic aspects of the pneumonias, with emphasis on the importance of accurate records and the reporting of laboratory findings in the typing of specimens from pneumonia patients. Procedures in the technic of typing of the pneumococci were given comprehensive and practical consideration by Dr. Borts.

The second and third days of each week were devoted largely to laboratory periods for the study of the pneumococcus, to demonstrations of the Concentration Method and Mouse Inoculation Method as adjuncts in the examination of sputum specimens. Members of the class examined unknown specimens containing the pneumococcus and reported their findings.

The diagnostic antipneumococcic serum used in following the Neufeld procedure was supplied without cost through the courtesy of Lederle Laboratories, Inc., New York.

Appreciation is extended to Dr. Barnes and his associates who set aside most of their regular duties and devoted unceasing effort to make the Pneumococcus Study Course a real success.

Attendants at Study Course

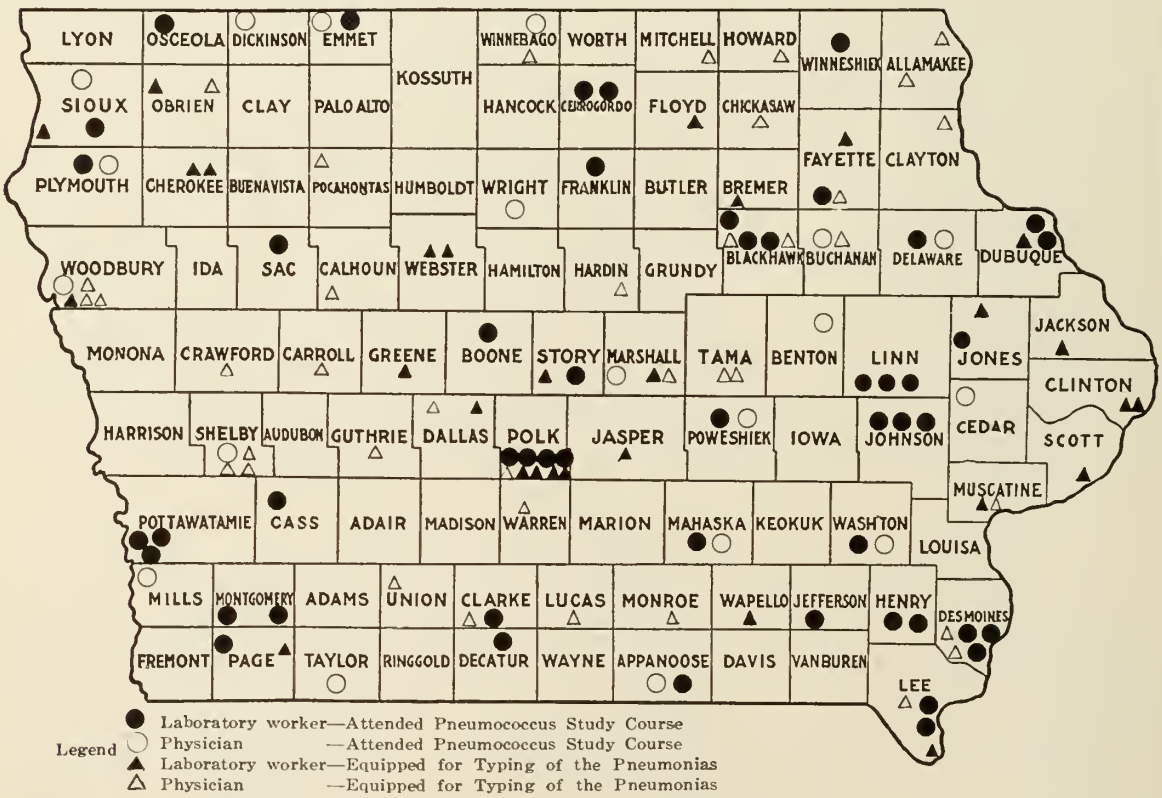
Following is a list of the seventy persons (with counties and hospitals or laboratories represented) who attended the Pneumococcus Study Course at Iowa City:

Laboratory Workers

County	City or Town	Name	Hospital or Laboratory
Appanoose	Centerville	Sister Mary Natalie	St. Joseph Mercy
Black Hawk	Cedar Falls	Leafel Norton	Sartori Memorial
Black Hawk	Waterloo	Sister Mary Valeria	St. Francis Hospital
Black Hawk	Waterloo	Lorraine Lindquist	Allen Memorial Hospital
Boone	Boone	Lorraine Burke	Clinic Laboratory
Cass	Atlantic	Lilyan C. Zindell	Atlantic Hospital
Cerro Gordo	Mason City	Bernice Benich	Park Hospital
Cerro Gordo	Mason City	Margaret Krepsky	St. Joseph Mercy Hospital
Clarke	Osceola	Mrs. Estella Moran	Osceola Hospital
Decatur	Leon	Eva Greene	Decatur County Hospital
Delaware	Manchester	Marie Mawe	Manchester Hospital
Des Moines	Burlington	Miss H. B. Hastings	Burlington Hospital
Des Moines	Burlington	Sister Mary Francella	Mercy Hospital
Des Moines	Burlington	Mr. J. B. Wahl	Security Laboratories
Dubuque	Dubuque	Anne Schwartz	Finley Hospital
Dubuque	Dubuque	Lorraine Wilhelm	Clinical Laboratories
Emmet	Estherville	J. M. Wolden	Coleman Hospital

County	City or Town	Name	Hospital or Laboratory
Fayette	Oelwein	Sister Mary Edward	Mercy Hospital
Franklin	Hampton	Miss P. A. Babcock	Hampton Clinic
Henry	Mount Pleasant	Dorothy Menefee	Henry County Hospital
Henry	Mount Pleasant	Carol Martin	State Hospital
Jefferson	Fairfield	Phyllis C. Baker	Jefferson County Hospital
Johnson	Iowa City	Vivian Floerchinger	S. U. I. Hospital
Johnson	Iowa City	Dr. M. E. Barnes and Staff	State Hygienic Laboratory
Johnson	Iowa City	Sister Mary Philomena	Mercy Hospital
Jones	Anamosa	Sister Mary Ignatius	Mercy Hospital
Lee	Fort Madison	Roland Blackburn	Prison Hospital
Lee	Fort Madison	Sister Luciana	Sacred Heart Hospital
Linn	Cedar Rapids	Josephine Emery	St. Luke's Hospital
Linn	Cedar Rapids	Esther Lorenc	St. Luke's Hospital
Linn	Cedar Rapids	Jean Wise	Security Laboratories
Mahaska	Oskaloosa	Kathleen Christine	Mahaska County Hospital
Montgomery	Red Oak	Mildred Gilbert	Murphy Memorial Hospital
Montgomery	Villisca	Nora Wood	Office—J. Clark Cooper, M.D.
Osceola	Sibley	Catherine Deegan	Osceola Hospital
Page	Shenandoah	Mrs. Ernestine Lambert	Hand Hospital
Plymouth	Le Mars	Sister Ritamary	Sacred Heart Hospital
Polk	Des Moines	Bertine Hooper	Broadlawns General
Polk	Des Moines	Sister Mary Joseph	Mercy Hospital
Polk	Des Moines	Mrs. Mae Chader	Iowa State Dept. of Health
Polk	Des Moines	Nelle Fishel	City Laboratory
Pottawattamie	Council Bluffs	Sister Mary Antoinette	Mercy Hospital
Pottawattamie	Council Bluffs	Roberta Nelson	Jennie Edmundson Hospital
Pottawattamie	Council Bluffs	Marguerite Morehouse	Jennie Edmundson Hospital
Poweshiek	Grinnell	Ouita B. Thompson	St. Francis Hospital
Sac	Sac City	Margaret B. Maystadt	City Hospital

DISTRIBUTION OF PNEUMONIA TYPING STATIONS IN IOWA



Pneumonia Typing Stations

The accompanying spot map shows the distribution by counties of the laboratory workers (shaded circle) and physicians (clear circle) who participated in the Pneumococcus Study Course at the State Hygienic Laboratory in Iowa City. The shaded and clear triangles indicate laboratory workers and physicians, respectively, who have received diagnostic antipneumococcic serum from the State Department of Health and are equipped for type determination of pneumococci. The total number of typing stations in Iowa is 135.

It is hoped that physicians in or adjacent to counties where typing stations are located, will make the most of laboratory facilities available in their vicinity for early diagnosis of the pneumonias.

County	City or Town	Name	Hospital or Laboratory
Sioux	Orange City	Roschia A. Gilmore	DeBey Hospital
Story	Nevada	Mr. H. T. Staff	Iowa Hospital and Sanitarium
Washington	Washington	Blanche Robertson	Washington County Hospital
Winneshiek	Decorah	Nancy Nitz	Decorah Hospital

Attending Physicians

Buchanan	Independence	C. W. Tidball, M.D.	Peoples Hospital
Cedar	Mechanicsville	E. H. Littig, M.D.	
Dickinson	Lake Park	W. E. Bullock, M.D.	
Emmet	Estherville	M. T. Morton, M.D.	
Johnson	Iowa City	M. A. Woods, M.D.	S. U. I. Hospital
Mahaska	Oskaloosa	E. M. Williams, M.D.	Mahaska County Hospital
Marshall	State Center	A. D. Woods, M.D.	
Mills	Glenwood	J. H. Kuitert, M.D.	State Institution
Poweshiek	Grinnell	S. D. Porter, M.D.	Community Hospital
Shelby	Harlan	J. P. McGowan, M.D.	
Sioux	Hull	Herman J. Kooiker, M.D.	
Taylor	Bedford	G. W. Rimel, M.D.	
Winnebago	Lake Mills	N. T. Johnson, M.D.	
Woodbury	Sioux City	E. H. Boyer, M.D.	St. Vincent's Hospital
Wright	Belmond	S. P. Leinbach, M.D.	Belmond Hospital

Health Officials

Appanoose	Centerville	Frank J. Condon, M.D., Dir. Health District No. 2
Delaware	Manchester	C. L. Putnam, M.D., Dir. Health District No. 3
Plymouth	LeMars	H. H. Ennis, M.D., Dir. Health District No. 1
Polk	Des Moines	Carl F. Jordan, M.D., Iowa State Department of Health
Washington	Washington	D. C. Barrett, M.D., Dir. Washington County Health Unit

FIRST CASE OF LYMPHOCYTIC CHORIOMENINGITIS REPORTED

The first case of lymphocytic choriomeningitis in Iowa was reported to the State Department of Health. November 25, 1938, by W. H. Presnell, M.D., of Charlotte in Clinton county. Dr. Presnell's report of this case appears in the scientific section of the current number of the Journal.

In 1934, Armstrong and Lillie, Surgeons of the United States Public Health Service, described a virus, previously unidentified, which was isolated from brain tissue of a patient who died in St. Louis at the time of the outbreak of epidemic encephalitis in 1933. This virus was found to be the cause of lymphocytic choriomeningitis.

Armstrong and Dickens[1] define lymphocytic choriomeningitis or acute aseptic meningitis as "an infection of the upper respiratory tract, followed by meningeal symptoms which are ushered in by sudden onset with headache, nausea or vomiting, rise in temperature, 100 to 103 degrees, stiff neck and usually a positive Kernig's sign. There is no evidence of nerve involvement, and other than noted above, the neurologic examination is negative. The disease runs a benign course for about ten days to two weeks. Lymphocytes in the spinal fluid number fifty or over. The spinal fluid content of chloride, sugar and urea is normal."

The diagnosis of lymphocytic choriomeningitis is based upon clinical and laboratory findings and upon the Neutralization or Mouse Protection Test, by means of which virus antibodies are demonstrated in the patient's serum.

Results of neutralization tests carried out on serum specimens from adults and children have been reported by Wooley, Armstrong and Onstott.[2] Other articles by Armstrong and Wooley[3] and by Lillie[4] discuss respectively, the distribution of the virus of lymphocytic choriomeningitis in experimentally inoculated monkeys and the pathologic histology of lymphocytic choriomeningitis.

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PREVALENCE OF DISEASE

	Nov. '38	Oct. '38	Nov. '37	Most Cases Reported From
Diphtheria	118	74	17	Webster, Black Hawk
Scarlet Fever	280	205	746	Polk, Black Hawk, Woodbury
Typhoid Fever	45	17	7	Linn
Smallpox	30	4	152	Audubon, Marshall
Measles	180	51	17	Woodbury, Sioux, Mills
Whooping Cough	108	61	172	Black Hawk, Woodbury, Buchanan
Cerebrospinal Meningitis	1	2	5	Woodbury
Chickenpox	208	81	332	Dubuque, Black Hawk Woodbury
Mumps	30	32	32	Winneshiek, Woodbury
Poliomyelitis	1	6	22	Hardin
Tuberculosis (Pulmonary)	57	120	87	(For State)
Undulant Fever	11	12	18	(For State)
Gonorrhea	172	163	117	(For State)
Syphilis	256	265	293	(For State)

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RALPH R. SIMMONS, Associate Editor.....Des Moines

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WE START A NEW YEAR

Again that time of year has arrived when custom dictates that accounts be cast up, that the accomplishments and failures of the past year be reviewed, and that resolutions and aspirations for the year ahead be formulated. To this time-honored practice the JOURNAL readily yields, and hereby submits its reflections on 1938 and its forecasts for 1939.

First, the JOURNAL takes this opportunity to wish most sincerely for each of its readers the attainment of success in the New Year—that success which each of you, in the innermost recesses of your heart, most desires. To some this will mean one thing; to others, another, for the definition of success is not uniform.

Looking back over the year 1938 we feel we can honestly say the JOURNAL has maintained its standard of previous years. We regret we cannot boast of some outstanding improvement. The essential function of the JOURNAL is, of course, to make available scientific medical information. Such publications as ours form one of the most effective means of postgraduate education. Its efficiency in this respect varies directly with the number of articles which can be carried in each issue, and with their quality, not their length. The JOURNAL should be an accurate reflection of the level of medical practice which obtains in our state. We hope that the articles contained in the JOURNAL during the past year have succeeded in raising this plane, and we are sure that 1939 will see a continued increase in these standards.

One of our most cherished aspirations as editor of your JOURNAL is to enlist the services of physicians throughout the state who are doing original valuable work, to the end that all members may profit by learning of their efforts through the pages of the state medical publication. Only in this way can the JOURNAL truly reflect the type of medical practice existant in the state of Iowa today. A start in this direction was made last year when twelve unofficial representatives were appointed in various parts of the state to assist the editor in obtaining worthwhile papers and articles presented before county society meetings, as well as to report special investigative work being done by individual practitioners. In this connection it is well to remember that the JOURNAL should be the property and responsibility of each and every member of the Society, and not alone of the editor and officers. Another feature, inaugurated in this issue of the JOURNAL, and one which we feel will prove extremely valuable, is the reporting of the University of Iowa, College Hospital Staff meetings. If the JOURNAL is to approach our ideal in being an adjunct for postgraduate teaching, we must continue to bring to our readers all the latest information on a great variety of subjects.

Unquestionably 1938 has been an important year in socio-medical problems, and we feel that we have adequately and accurately kept our members informed of new proposals and plans as they have arisen. We especially wish to commend the chairman and members of the Medical Economics Committee for their splendid cooperation and untiring efforts on behalf of the Society. Not only has this Committee sincerely endeavored to guide the society on an ethical, yet progressive, path through the maze of schemes, plans and proposals, but it has taken upon itself the task of giving an account of its stewardship to the members of the Society, so that all might be informed on these questions of such prime importance to the medical profession.

VITAMIN A IN HEALTH AND DISEASE

The evolution of the knowledge of the vitamins is one of the most dramatic and useful contributions of modern science. The history of Vitamin A dates from 1913 when several different investigators described an "unidentified something" in milk fat which was necessary for a wholesome diet, and which was absent in lard. This "unidentified something" was later designated as Vitamin A and since 1913 much of the mystery concerning this food factor has been unraveled. It recently has been synthesized in the laboratory.

Vitamin A is a necessary factor in the biochemistry of all vertebrates. It is derived from the carotenoid pigments of plants and is an essential element in the diet of all higher animals. The organism is unable to synthesize Vitamin A, but breaks down the more complicated precursors or carotene into Vitamin A. Thus Vitamin A is the product of animal metabolism from precursors which are metabolic products of plants.

Carotenoid pigments are widely distributed in nature, but there are only four of the large group of plant pigments from which animals can form Vitamin A. The exact function of these pigments in the plant is unknown, but it appears to be closely related to chlorophyl and in general it may be said that the amount of chlorophyl in green plants is an index of the amount of carotene. The chief sources of carotene are the green leafy vegetables, green beans and peas. Vitamin A value is frequently indicated by the yellow color, as in carrots and sweet potatoes, and in apricots, bananas and yellow peaches. Yellow corn is also a potent source of carotene. Milk and eggs are a valuable source, but the amount of vitamin in these products depends on the amount of Vitamin A in the diet of the cow or hen. Halibut liver oil, percomorph oil and cod liver oil are rich sources of Vitamin A, originating from the carotene present in small marine Algae, which constitute the diet of cod and halibut.

The recognized standard of Vitamin A is the international unit which is the growth-promoting activity in rates of 0.0006 of a milligram of standard beta carotene. In this country the Sherman unit has been most extensively used and consists of the amount of Vitamin A which when fed daily to rats produces a three gram gain a week during an experimental feeding period of four to eight weeks. According to the Council on Foods of the American Medical Association, one Sherman unit equals 0.66 to 0.80 international units. The daily requirement of Vitamin A for the average adult is from 1,400 to 2,000 units, although 3,000 units daily are recommended. This allowance of Vitamin A may be supplied by liberal amounts of milk, butter, cheese, eggs and green leafy vegetables. For the growing child 6,000 to 8,000 units are considered adequate; for the pregnant or nursing woman 5,000 units are indicated, and this may be provided by the above diet with the addition of some fish oil.

The place of Vitamin A in human economy has been the subject of an enormous amount of research and clinical study. The allowable claims for Vitamin A preparations by the Council on Pharmacy and Chemistry of the American Medical Association consist of:

1. Vitamin A is valuable in the prevention and treatment of xerophthalmia.

2. Vitamin A is indicated for the prevention and treatment of night blindness.

3. Vitamin A is an aid toward establishing resistance of the body to infections in general only when there has been an exhaustion of body reserves of the vitamin and the ingestion of Vitamin A has been inadequate.

4. A deficiency of Vitamin A results in a retardation of growth when body stores of the vitamin are depleted, but it is no more important than any of the other vitamins, the minerals or the amino acids.

5. There is no evidence to warrant the claim that the ingestion of sufficient Vitamin A will prevent the formation of renal calculi.

The earliest functional change in Vitamin A deficiency is diminished adaptation to dim light, or night blindness. This is attributed to the slow regeneration of visual purple in the retina, and studies indicate that Vitamin A forms a loose chemical union with the protein of the rods of the retina. The specific pathologic processes in Vitamin A deficiency result in the keratinization of the epithelial structures of the salivary glands, the respiratory tract, the genito-urinary tract, the eyes and the periocular glands.

In this country our interest in Vitamin A is concerned with its inclusion in the diet in sufficient amounts to maintain optimal health and to prevent night blindness. The liberal provision of Vitamin A containing foods in the diet meets the requirements of the average adult. In children, in pregnant or nursing women, and in patients convalescing from illnesses, the diet should be augmented by fish liver oil. The ingestion of excessive amounts of Vitamin A has no place in rational therapeutics.

DUES FOR 1939

Dues should be received for 1939 before February 1, if you do not wish to become delinquent. Maintain your state membership and send a check to your county society secretary at once!

The Doctor at the Crossroads

NATHAN B. VAN ETTEN, M.D., New York, N. Y.

The following article was presented before the Kings County Medical Society in Brooklyn, New York, October 18, 1938, by Dr. Nathan B. Van Etten, former speaker of the House of Delegates of the American Medical Association. We feel it expresses the problems and dilemmas facing physicians and laymen in a concise and comprehensive manner, and for this reason have secured permission from the Public Relations Bureau of the Medical Society of the State of New York to reprint this address, so that members of the Iowa State Medical Society might have the privilege of reading it.

"'Medical Service for all Americans' demands the propagandist for government administration and supports his thesis by claiming that medical service is neither available nor willingly given.

"The medical profession denies the truth of both of these statements. The profession is numerically ample, its generosity is traditional, and approximately 20 per cent of all hospital beds are unoccupied. Medical service for all the people has long been an objective of the American Medical Association. Better medicine through better educated physicians is constantly studied by its councils. The Council on Medical Education and Hospitals promotes these ideals every day in the year. There are people who have no medical care—there are people who do not seek medical care—there are others who object to medical care and there are sick people who do not know how to find medical care; these people must be surrounded by the protecting arms of the public health service.

"The medical profession makes no claim to flawless service, but it is most unfair to claim that no progressive effort is being made to improve it. Postgraduate education is offered to the physician at teaching centers and is also carried to him in the country, in the belief that his education must go on as long as he lives—not only in the interest of sick individuals, but in the interest of every citizen of the country.

"There has never been a time of greater need for leaders. There should arise in every part of our country men filled with the consciousness of the importance of furnishing better medical service to the American people. The medical profession must not rest upon the laurels of accomplishment. The fact that our medical service is said to be the best in the world does not justify relaxation of efforts to make it better. Clinical students, research students and students of social philosophy must continue to pursue the elusive secrets of pathology, and at the same time apply themselves to broad practical application of their knowledge to the improvement of the public health. Raising the cultural levels of science is no more important than raising the levels of social intelligence.

"The American Medical Association has been reviled as reactionary—static and obstructive of social progress. If these criticisms are valid the responsibility lies with the whole medical profession. If American medicine is to go forward it must welcome constructive criticism from whatever source, and every physician must be encouraged to express himself in the meetings of his county medical society, where he will be heard.

"Some of the criticism from within the profession seems to have come from physicians who chose to ignore this procedure and sent their complaints through the public press. Criticism from without seems to have come from politically minded people who style themselves experts in social philosophy. It is believed that few of them have had bedside experience.

"The fact that most of the 110,000 members of the American Medical Association are trying to take care of sick people does not absolve them from valid charges that they are failing to take an active interest in broader fields of medical service.

"How can this interest be stimulated? How many physicians are informed about the progressive work of their delegates at the recent special session in Chicago? How many have read the minutes published in the *Journal* of September 24? How many physicians read anything in their journals besides the articles which discuss the special problems which confront them in their practice? How many physicians read their journals at all?

"The physician reads his local newspaper and finds himself accused of something akin to criminal negligence. He senses a crisis in his professional life. Where shall he go from here? He sits at the crossroads in great perplexity. He reviews with satisfaction his evolution from the days when he was a barber or a servant of a wealthy patron up to the time when he became licensed by society to practice healing arts, and recognized and respected because of his knowledge anl ability.

"Introspectively he is sorry for himself. His self esteem has been hurt by investigative research and criticism of his effectiveness not only as a social agent but as a technician. His education has been criticized; even his character has been assailed. He has heard himself branded as reactionary, as a merchant of health, as a Robin Hood, as a dishonest fee splitter, as a criminal abortionist or as a cheater of insurance companies. His ethics have been reviled as mere facades. He is unhappy because his income is shrinking while he sees unnecessary invasion of his field by government agencies.

"If he is an average man he realizes that competition at his own level is unnecessarily severe because too many are permitted to divide his opportunity. In spite of all such discouragement he is generally ethical and seldom yields to temptations to escape from his distress by devious paths. He is still a member of the society of educated gentlemen and he tries to justify himself. He knows that the practice of medicine has greatly changed in the last twenty years. Preventive medicine has largely eliminated diseases which formerly absorbed much of his effort, and whether he likes it or not, he must cultivate new fields. He knows the biological results will always create new problems.

"Adolescence and senescence and casualties, and malignancies will continue to engage his earnest thought, but his major function may possibly lie along the lines of education. Life has been externalized by science which has progressed from one objective revelation to another. Standards of living are constantly changing and challenge deliberation. The doctor must not only study constantly to understand them and their effect upon the health of our citizens, but he must prepare himself for leadership of social currents so that they may become assets instead of perils to our civilization.

"In the presence of the greatest literacy ever known, health education may be expected to have increasing value. Perhaps it has, but the great American dream is luxurious living, constantly inspired by cheap promotion. Youth is fascinated by glamorous prospects, succumbs to salesmanship which urges pleasure as an immediate objective. Health means nothing until it is lost. Some people are talking about the man of tomorrow. That man is the doctor's job. It is his job for biological reasons to keep him fit for tomorrow, he must be educated, he must be taught to protect himself from infection, and from early senescence. It is the doctor's job to rise from his contemplative seat at the crossroads and to keep himself actively organized for the protection of the public from false ideas, it is his job to educate himself not only in the field of preventive medicine but in efficient citizenship.

"In his great Phi Beta Kappa oration, Alexis Carrel urges the promotion of a center of synthetic thought, a focus of collective investigation of human problems, in fact into an institute for the construction of the civilized.

" 'Is it not more important to improve man than the goods consumed by him?' he insists. 'Are health and comfort of any value if we become mentally and spiritually worthless? Those who have given their lives to the search for the prevention and cure of disease are keenly disappointed in observing that their efforts have resulted in a large number of healthy defectives, healthy lunatics and healthy criminals. And in no progress of man.

" 'As far as I am concerned,' Dr. Carrel concluded, 'I intend to devote the rest of my life to the problem of developing man in his organic and spiritual entirety. For the quality of life is more important than life itself. We must now use theoretical and applied science, not for the satisfaction of curiosity, but for the betterment of the self and for the construction of truly civilized man.'

"Will the physician at the crossroads respond to such a stimulus? The fact that more than half of the million hospital beds in the United States are occupied by insane patients is a challenge to every doctor in the land. The hesitant doctor looks back upon the long uphill road which he has climbed, he looks ahead and sees only more difficult heights, he looks down into a valley of indecision. Will he slip into decadence or will he become a fighter for whatever he thinks is right?

"The relation of the physician to society assumes acute importance in the presence of experimentation under the aegis of social security. Extraordinary political changes in every part of the world, reversion in many countries from democracy to autocracy, tendencies to centralization of authority in the United States, and submergence of the individual in mass movements, cannot fail to disturb practitioners of medicine who have been developed under the American tradition. American physicians must assume social leadership if they would avoid the rôles of pawns in the hands of those who are playing the game of political strategy. Membership in a profession seems to have been regarded as an insulation against extra professional contacts. Preoccupation with scientific interests has erected barriers to civic interest. Physicians have been called poor business men, impractical idealists. Their senti-

mentalism has been exploited by professional welfare organizations. Without the gratuitous service of the doctor many of these organizations would fail. So-called philanthropy is not dependable, but the physician will always work for the pay of experience, for the pay of prestige, for the pay of applause from the day of his graduation until the end of his life, probably always hoping that fortuitous circumstance will send him wealthy patients whose gratitude may assume a really valuable material expression. The physician himself is chiefly responsible for his precarious position. He has been so busy in his own kitchen garden that he has seldom looked upon the fields outside.

"American physicians face problems which, seemingly new, are almost invariably old enemies in new clothes. Old world experience should be studied by the lamps of history and lessons applied by intelligent, militant physicians who are willing, if necessary, to become crusaders. Physicians will became effective only when they stand upon their own solid ethical foundations, and become civically conscious.

"The physician is often the priestly guide, counselor and friend, and confessor. To fill such demands he must, himself, possess moral quality, and educated intelligence. No one should enter the practice of medicine with the sole idea of being gainfully employed. Very few acquire wealth through the medium of medical practice. Many fail because they cannot fit themselves into a sympathetic social environment, are not real students of human beings as individual personalities, or are indolent, or have not the moral fibre to preserve their rectitude inviolate under the seductions of expediency.

"Organized medicine is not a trade union. Physicians are not selling commodities in competition with other merchants. They are not merchants of health, selling cures, or formulae, or medicines, or instruments. Physicians are professionals giving service for which they may or may not be paid, and they must expect to give it regardless of fee. They are the privileged servants of the sick, and being obligated by an oath, must carry themselves on loftier planes than those who buy and sell for profit.

"The practice of medicine is concerned with three classes of people; the indigent, the large middle class, and a small group of people who may be called independently well-to-do. All of these people are better cared for in the United States than anywhere else.

"A medical profession which includes large numbers of keen students has furnished striking advances in the last twenty-five years. Medicine has made extraordinary strides in epidemiology, in the therapy of diabetes, in the therapy of anaemia, in the therapy of orthopedics, in brain surgery, in chest surgery, in radiation therapy. Scientific methods have replaced empiricism. Medical schools are constantly striving to bring a high order of intelligence to the care of the sick. Hospital staffs are infused with teaching spirit. Hospital regulation by organized medicine permits no slackening of vigilance. Certification of specialists by examining boards does much to protect the patient from those who may be incompetent.

"Sick people in the well-to-do group may buy all of these remarkable services. People in the large middle group may buy as much as they are able to pay for privately, and may avail themselves of elaborate hospital facilities at rates that range from maintenance costs to below cost services. People in the indigent group have access to hospitals which are supported by the taxpayer and also receive the benefit of the most approved therapy. Everybody may choose his own physician except those who seek free treatment in the hospital or clinic where they must accept the services of the physician who may be assigned.

"There is very little criticism of the *quality* of medical care. The criticism concerns distribution, demands more free medicine, asks increased subsidy by government, meaning of course more help from the taxpayer, and looks to the implantation on the American people of some compulsory system as one of those in European use. Health insurance schemes abroad do not take care of the indigent, have not reduced morbidity, but have reduced the physicians to a very low place in the social scale. The present American system, however faulty, cares *for all* classes of people with very much better success.

"If the critics would compare the failures of distribution of medical care with the failures of the distribution of education, housing, of clothing or of food, they would doubtless discover that they are talking about the same groups of people. The care of these people is outside the field of insurance. It is the problem of the taxpayer. Medical service for these people is the job of the physician and he must be paid for his work by the taxpayer.

"Here is a task for the medical citizen. Let him step out of his professional seclusion, and let him participate actively in municipal affairs. Let him realize that preventive medicine may be greatly advanced by eliminating unsanitary housing, by feeding the undernourished, by clothing those who are unable so to provide for themselves.

Is it not the task of the medical citizen to lead the thought of the taxpayer to the realization that the facilities for medical care of the indigent are his responsibility, that free hospital service must be extended, that perhaps the tax supported hospital must assume all of the burden with both intern and extern service radiating from the hospital to home care? Is it not the task of the medical citizen to point out that under our present system, the landlord, the grocer, the clothier, house, feed and clothe the poor for *pay* only, while the doctor assumes their physical care in the hospital and in many homes without fee, and the landlord, the grocer, the clothier and other citizens expect him to continue this unfair sacrifice?

"Let us put it baldly. Let the municipality take over the hospital care of the indigent, use the facilities of the hospital for home care of the indigent, and let the doctors who are concerned with this care be paid for their service. There are already less than eight hundred people in the United States for every physician, and the average annual sickness is less than seven days. About twenty-five hundred physicians die every year, while at present seven thousand take their places. You see that the mathematics are stacked against the physician and if he continues to prevail he will need some very realistic hard work to support his idealism. Another handicap is revealed in the studies of the Brookings Institute which showed that in 1929, a peak year, more than 42 per cent of American families received less than $1,500 and almost 60 per cent less than $2,000. Such incomes are a little more than subsistence requirements and provide very small margins to cover the emergencies of sickness.

"The increasing dependence upon municipal hospitals by people who seem to need free care, the increasing demands upon physicians who serve these hospitals without pay, and the increasing financial embarrassment of the voluntary hospitals, are indices which cannot be ignored. Many hospitals deeply in deficits are surrendering their independence to municipal support, an apparently inevitable trend. Many hospital people who are unhappy over economic conditions think that they can cure situations by adopting service plans. Hospital service plans, now involving more than two million subscribers, seem to be working well for the hospitals and indirectly for the physician.

"All of these efforts are valuable evolutionary measures moving toward better public service without sacrificing the physician to bureaucratic domination. Intramural development of the hospital to the highest degree will not bring it to its true place in our social structure. The day of exclusion and seclusion is past. Generous cooperation with all physicians and with social agencies must be developed. Hospital zones must be planned and all competent physicians living within the zones must be permitted the use of the hospital's facilities. Individualism has been sneered at by welfare groups which are struggling for warm places in snug bureaus, but after all is said, and after studying all of the European service plans which employ more lay managers than physicians, which pay clerks more than doctors, we must pay tribute to the best traditions we have in this country which are based upon the individual care of the sick by the individual physician.

"The American physician represents the most highly educated group of the community but he rarely functions as a citizen. How can the medical profession expect consideration from our law makers while the physician stands aloof from the actual exercise of citizenship? It seems more important than at any time in our history that physicians should take positions of leadership in public activities, thereby indicating their willingness to cooperate to the limit of their abilities in the promotion of projects which seem to have community value. In order to be effective, physicians must have more than superficial knowledge of the machinery of government; they must educate themselves to function as citizens in the best sense of whatever citizenship means or implies. Someone has said recently that many people pass unconsciously from adolescence to obsolescence. Unless American physicians can be aroused from their civic adolescence, a similar judgment will be their inheritance."

SOCIAL HYGIENE DAY

The date for the Third National Social Hygiene Day has been set for Wednesday, February 1, according to a recent announcement made by Dr. Walter Clarke, executive director of the American Social Hygiene Association. This third anniversary is expected to exceed in scope and effectiveness the observance of the last two years, since evidences of interest indicate that larger numbers of voluntary health and welfare agencies, civic groups, service clubs, women's organizations, churches, schools, and other youth bodies, were preparing for meetings and community-wide campaigns against syphilis on and near this date.

"Guard Against Syphilis" is the slogan for this year's campaign, which will be marked by some five thousand meetings throughout America. The following points are important features of the various community programs:

1. Guard against syphilis by telling the American people about this dangerous disease, and how it can be prevented and cured.

2. Guard against syphilis in youth, the age of greatest incidence, by strengthening the efforts of church, home, and school to provide better facilities for sex education, character development, and preparation for marriage; and by correcting community conditions which threaten the health and welfare of young people.

3. Guard against syphilis in marriage and childhood by encouraging good laws; their observance; and requiring examinations for all those about to marry, and for all expectant mothers.

4. Guard against syphilis by attacking prostitution and quackery, two arch-accomplices of the disease.

5. Guard against syphilis by supporting adequate voluntary and official health programs, both state and local.

As in years past, press and radio aid will be sought in cultivating public interest in Social Hygiene Day and its objectives. Our members will be called upon to cooperate in this undertaking, both as physician speakers and interested citizens. We are sure that all who can will cheerfully and actively support this worthwhile cause.

HOBBY EXHIBIT AT ANNUAL SESSION

Last year, for the first time at an annual session of the Iowa State Medical Society, an exhibit of doctors' hobbies was presented, and it proved to be such an interesting feature of the state meeting that once again the physicians of the state are being invited to exhibit specimens of their special hobbies.

As was the case last year, a special room will be set aside for the show. Beaver board mats for mounting prints, photographs, etc., and tables, will be provided. There is no entry fee, but exhibitors will be expected to pay for the transportation of their exhibits, and for any unusual expense involved. Those who visited the hobby exhibit last year were high in their praise of this idea, and it is expected that this second venture will bring forth equally interesting evidences of the manner in which physicians spend their leisure moments. It will be well to remember that the annual session will be held earlier this year than usual, April 25, 26 and 27, and that it is not too early to start preparing your collections for exhibition.

Dr. J. M. Bruner, of Des Moines, is again in charge of the project, and communications should be addressed to him in care of the central office of the Iowa State Medical Society, at 505 Bankers Trust Building, Des Moines, Iowa.

SPEAKERS BUREAU ACTIVITIES

SPRING COURSES

Work has already begun on the spring postgraduate courses for the state. At the present time, two districts, the eleventh and the fourth, have requested programs for their physicians. The eleventh district plans to conduct a University course in medicine and surgery, similar to the one which was so successfully presented in West Union last fall. The complete schedule has not been determined for the fourth district course as yet.

The Speakers Bureau would like to urge the members of the Committee on Postgraduate Medical Education to confer with and assist their fellow colleagues in selecting the type of postgraduate course most desired in their district, and to transmit the wishes of their district to this office as soon as possible, after a definite outline for the course has been determined. Furthermore, any county society members should get in touch with the members of the Committee in their district immediately and make known their wishes regarding the presentation of a postgraduate medical education program for spring.

In view of the fact that the annual meeting will be held early this year, the postgraduate courses must likewise begin early. Outlines for courses and suggested speakers will be gratefully received at the Speakers Bureau at all times, and we will endeavor to meet all specifications as satisfactorily as possible.

The fee charged for an eight lecture course will be $10.00. Postgraduate course meetings need not be held in one city in a district; programs on a single course may be held in several different centers in a district. This plan was inaugurated in the eleventh district last fall and worked very well, since it enabled a much larger number to attend the lectures.

Complete outlines of all the courses will appear in future issues of the JOURNAL. For further details or suggested subjects and speakers, please communicate with the Speakers Bureau.

RADIO SCHEDULE

WOI and WSUI—Tuesdays at 4:00 p. m.

Jan. 3 An Interpretation of the National Health Program, Lee F. Hill, M.D.

Jan. 10 Your Body—A Vital Machine (4-H Club Series), Daniel J. Glomset, M.D.

Jan. 17 Food (4-H Club Series), Kate Daum, Director, Nutrition Department, University Hospitals.

Jan. 24 Home Influences and Juvenile Delinquencies, Frank A. Ely, M.D.

Jan. 31 Clothing (4-H Club Series), Julia Cole, M.D.

Feb. 7 Colitis, Clare A. Trueblood, M.D.

WOMAN'S AUXILIARY NEWS

Mrs. Fred Moore, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—Mrs. Dean W. Harman, Glenwood
Secretary—Mrs. Jay C. Decker, 722 Thirty-sixth Street, Sioux City
Treasurer—Mrs. William R. Hornaday, 3011 High Street, Des Moines

Jackson County

The Woman's Auxiliary to the Jackson County Medical Society was entertained by the medical society at a six o'clock dinner, served in the Legion Hall at Maquoketa, Monday, December 12.

Mrs. George C. Ryan, on behalf of the members of the Auxiliary, graciously extended congratulations, to Mrs. E. A. Hanske, who is president elect of the Woman's Auxiliary to the Iowa State Medical Society.

After listening to an address on Public Health, delivered by C. L. Putnam, M.D., of the State Department of Health, Des Moines, the members retired to an adjoining room, where the annual business meeting was conducted. Two new members were welcomed to the unit, which gives Jackson County one hundred per cent membership.

Mrs. J. W. Jordan reported on her attendance at the annual session of the Woman's Auxiliary to the American Medical Association held last June.

Mrs. R. E. Dwyer gave a splendid review of the volume, "The Citadel," by Dr. A. J. Cronin, and this was followed by an interesting discussion and comparison with the motion picture made from the book.

Mrs. E. L. Lampe, Secretary

Muscatine County

The Woman's Auxiliary to the Muscatine County Medical Society wishes to report on some of its outstanding meetings, held under the presidency of Mrs. B. E. Eversmeyer. In October we had a very pleasant pot-luck dinner at the home of Mrs. C. P. Phillips. One of our members, Mrs. Walter Norem, had made a trip to Mexico, with Dr. Norem, and Dr. and Mrs. J. D. McPike (dentist), and Dr. McPike graciously showed films he had made of scenes and activities of the trip. In November the Auxiliary sponsored another public lecture. This year the topic was Suggested Changes in the Distribution of Medical Service in the United States, and John I. Marker, M.D., of Davenport, efficiently and comprehensively presented the subject to a large audience.

Mrs. P. M. Jesup, Secretary

Polk County

As the year 1938 closes the Woman's Auxiliary to the Polk County Medical Society makes the following report and recounts some of its activities.

The new officers were chosen in January. The appointments of the new committees were completed, and the activities of the group were opened for the year by March first with seven meetings planned.

The March meeting was a one o'clock luncheon held at Younker's Tea Room, followed by the regular business of the Auxiliary and a musicale given by the Roosevelt High School A Cappella Choir of seventy voices, under the direction of Miss Agnes Larson, a reading by Miss Kathryn Marshall and whistling numbers by Mrs. Emerson Winters of Indianola.

On April 5 we met at Hotel Kirkwood for luncheon, business meeting and bridge.

The May meeting consisted of a May morning breakfast held at Broadlawns Tuberculosis Hospital. After a tour of the buildings and grounds, plans were formulated for the state meeting which was held in Des Moines on May 11 and 12. June, July, August and September were declared vacation months.

On October 4 the Auxiliary resumed its fall and winter programs with a meeting at the Hotel Fort Des Moines. A very interesting review of both state and national activities was given, and a most delightful story of early surgery by Dr. Ephraim McDowell was told by Mrs. Daniel J. Glomset.

On November 1 an informal dinner and social evening, honoring our husbands, was held at Hotel Savery. One hundred and fifty-eight were present. During the dinner hour Mr. Vergne Ford presided at the Hammond organ after which a floor show was presented. Following the program, bridge and Chinese chinker-check were played.

The Auxiliary held its December meeting at Smouse Opportunity School Auditorium. Miss Bess Johnson, principal of the school, gave a talk on the "Education of Handicapped Children," followed by a few vocal numbers by the Girls' Sextette of Roosevelt High School and several piano numbers by Mr. Phillip Plank, pianist.

The January 3rd meeting was a one o'clock luncheon at Hotel Commodore for the annual election of officers. Following the election were talks by our State Auxiliary President, Mrs. Dean W. Harman of Glenwood on "Attaining Objectives of the Auxiliary," and Mr. Paul R. Hanson, superintendent of Iowa Lutheran Hospital, on "Group Hospitalization."

Thus we bring to a close another year—one which has been most pleasant, and successful as well.

Mrs. Edward J. Harnagel, Program Chairman

SOCIETY PROCEEDINGS

Adams County

The Adams County Medical Society met Tuesday, December 6, in Corning, and elected the following officers to serve during 1939: Dr. O. B. Hawley of Corning, president; Dr. A. W. Brunk of Prescott, vice president; Dr. J. H. Wallahan of Corning, secretary and treasurer, and Dr. Frederick Binder of Corning, delegate.

Audubon County

The annual election for the Audubon County Medical Society held Thursday, December 15, at the home of Dr. W. H. Halloran in Audubon, resulted as follows: Dr. R. A. Jacobsen of Exira, president; Dr. P. E. James of Elkhorn, vice president; Dr. Helge Borre of Audubon, secretary and treasurer; Dr. L. E. Jensen of Audubon, delegate, and Dr. R. H. Payne of Exira, alternate delegate.

Black Hawk County

Dr. F. Harold Entz of Waterloo was installed as president of the Black Hawk County Medical Society, at the annual meeting of that organization held in Waterloo, Tuesday, December 20. Other officers chosen were: Dr. E. I. Dunkelberg, president elect; Dr. Burr C. Boston, vice president; Dr. Craig D. Ellyson, secretary; Dr. George C. Murphy, treasurer; Dr. J. E. Brinkman,* delegate, and Dr. E. E. Magee, alternate delegate. All officers are of Waterloo.

*Deceased December 23, 1938.

Boone County

The Boone County Medical Society held its annual election of officers, Wednesday, December 22, at the Holst Hotel in Boone, with the following results: Dr. F. E. Powers of Boone, president; Dr. E. G. Grove of Boone, vice president; Dr. B. T. Whitaker of Boone, secretary and treasurer; Dr. A. B. Deering of Boone, delegate, and Dr. R. S. Shane of Pilot Mound, alternate delegate.

Bremer County

The annual election for the Bremer County Medical Society was held Wednesday, December 21, at Mercy Hospital in Waverly, and resulted as follows: Dr. E. C. Kepler of Waverly, president; Dr. James Whitmire of Sumner, vice president, and Dr. P. K. Graening of Waverly, secretary and treasurer.

Buchanan County

Dr. R. L. Knipfer of Jesup was named president of the Buchanan County Medical Society for 1939, at the annual meeting of the society held at the Gedney Hotel in Independence, Wednesday, December 14. Other officers are: Dr. B. B. Sells of Independence, vice president; Dr. N. L. Hersey of Independence, secretary and treasurer; Dr. H. A. Householder of Winthrop, delegate, and Dr. F. F. Agnew of Independence, alternate delegate.

Buena Vista County

The Buena Vista County Medical Society held its annual election Thursday, December 8, at the Bradford Hotel in Storm Lake, and chose the following officers to serve during the ensuing year: Dr. W. C. Porath of Storm Lake, president; Dr. John W. Morrison of Alta, vice president; Dr. T. R. Campbell of Sioux Rapids, secretary and treasurer, and Dr. M. A. Armstrong of Newell, delegate.

Chickasaw County

John McDannell, M.D., of Nashua, furnished the program for the Chickasaw County Medical Society at a meeting held in New Hampton, Thursday, December 8, presenting an address entitled, The Progress of Medicine in the Past Forty Years. The following officers were named at the business session: Dr. Nicholas Schilling of New Hampton, president; Dr. P. E. Gardner of New Hampton, vice president; Dr. E. M. Kennedy of New Hampton, secretary and treasurer; Dr. McDannell, delegate, and Dr. Schilling, alternate delegate.

Davis County

Two Ottumwa physicians were guest speakers for the regular meeting of the Davis County Medical Society, held in Bloomfield, Thursday, December 8. E. B. Hoeven, M.D., spoke on Eclampsia, and W. M. Whitehouse, M.D., presented a paper on Placenta Accreta.

H. C. Young, M.D., Secretary

Decatur County

The Decatur County Medical Society entertained Frank W. Fordyce, M.D., and J. H. Tait, M.D., both of Des Moines, as guest speakers for a meeting held Tuesday, December 6. Dr. Fordyce discussed The Diagnosis of the Acute Abdomen, and Dr. Tait spoke on The Treatment of Acute Eye Injuries. The program was very well received, and a general discussion was entered into by all present.

On Thursday, December 15, members of the society attended a meeting at the hospital in Leon, under the auspices of the State Department of Health. The main feature of the meeting was a motion picture on

The Diagnosis and Treatment of Syphilis, after which Robert E. Hansen, M.D., of Des Moines, led the discussion of the various aspects of the treatment of lues.

E. E. Gamet, M.D., Secretary

Des Moines County

Officers elected at the annual meeting of the Des Moines County Medical Society, held at the Hotel Burlington in Burlington, Tuesday, December 13, were: Dr. J. C. McKitterick, president; Dr. R. F. Moerke, vice president; Dr. E. P. Russell, secretary and treasurer; Dr. John T. Hanna, delegate, and Dr. Frank G. Ober, alternate delegate. Following a short scientific program, the society adjourned to meet with the County Interprofessional Association, which was addressed in a most interesting manner by Roland Stahr, M.D., of Fort Dodge.

E. P. Russell, M.D., Secretary

Dubuque County

The annual meeting of the Dubuque County Medical Society was held Tuesday, December 13, with the following results: Dr. Roy I. Theisen, president; Dr. H. G. Langworthy, first vice president; Dr. Morris G. Beddoes, second vice president; Dr. John J. Mueller, secretary; Dr. F. W. Meyers, treasurer; Dr. A. M. Loes, delegate, and Dr. L. H. Fritz, alternate delegate.

L. E. Cooley, M.D., Secretary

Hamilton County

Dr. G. T. McCauliff of Webster City was named president of the Hamilton County Medical Society at the annual meeting of that organization held in Webster City, Tuesday, December 13. Other officers are: Dr. E. F. Rambo of Webster City, vice president; Dr. M. B. Galloway of Webster City, secretary and treasurer; Dr. E. W. Slater of Jewell, delegate, and Dr. W. B. Lewis of Webster City, alternate delegate.

Hancock-Winnebago Society

Officers elected at the annual meeting of the Hancock-Winnebago Medical Society, held in Forest City, Tuesday, December 13, include: Dr. A. L. Judd of Kanawha, president; Dr. C. V. Hamilton of Garner, vice president; and Dr. M. T. Johnson of Lake Mills, secretary and treasurer.

Hardin County

The regular meeting of the Hardin County Medical Society was held in Iowa Falls, Thursday, December 8, and F. N. Cole, M.D., of Iowa Falls, furnished the scientific program for the evening. Dr. Cole spoke on The Use of Electrocardiography.

Henry County

Dr. F. R. North of Winfield, was chosen to head the Henry County Medical Society for 1939, at a meeting held in Mt. Pleasant, Tuesday, December 20. Other officers are: Dr. Bernhard Gloeckler of Mt. Pleasant, vice president; Dr. J. W. Laird of Mt. Pleasant, secretary and treasurer; Dr. W. A. Sternberg of Mt. Pleasant, delegate, and Dr. E. J. Lessenger of New London, alternate delegate.

Iowa County

Members of the Iowa County Medical Society entertained members of the Iowa County Dental Society at a meeting in Marengo, Monday, December 5. Wayne J. Foster, M.D., of Cedar Rapids, discussed Glaucoma, and Robert E. Hansen, M.D., of Des Moines, presented an illustrated lecture on the Diagnosis and Treatment of Syphilis. Officers for 1939 elected at the business session are: Dr. H. G. Moershel of Homestead, president; Dr. T. D. Clark of Victor, vice president; Dr. Irwin J. Sinn of Williamsburg, secretary and treasurer, and Dr. F. C. Schadt, also of Williamsburg, delegate.

Jasper County

Dr. John W. Billingsley of Newton was elected president of the Jasper County Medical Society at a meeting held in Newton, Tuesday, December 6. Other officers include: Dr. H. W. Canfield of Baxter, vice president; Dr. Marvin Wright of Newton, secretary and treasurer, and Dr. H. P. Engle of Newton, delegate.

Jefferson County

The annual election of officers for Jefferson County Medical Society, held Thursday, December 15, in Fairfield, resulted as follows: Dr. Kenneth G. Cook, president; Dr. Harold E. Graber, vice president, and Dr. Ludwig Gittler, secretary and treasurer. All officers are of Fairfield.

Johnson County

The Johnson County Medical Society met Wednesday, December 7, at the Jefferson Hotel in Iowa City, and the following officers were elected for 1939: Dr. W. M. Fowler, president; Dr. J. H. Wolfe, vice president; Dr. R. J. Prentiss, secretary and treasurer; Drs. George C. Albright, E. M. MacEwen and A. W. Bennett, delegates; and Drs. M. E. Barnes, H. R. Jenkinson, and J. D. Boyd, alternate delegates. The program was conducted by Walter L. Bierring, M.D., State Health Commissioner, Des Moines, and Miss Van Ackeren, who spoke on the advisability and duties of a county public health nurse. Carl F. Jordan, M.D., Des Moines, also of the State Department of Health, reported on the epidemic of tularemia.

W. M. Fowler, M.D., Secretary

Lee County

Officers elected to serve the Lee County Medical Society during this year are: Dr. B. J. Dierker of Fort Madison, president; Dr. T. L. McKee of Keokuk,

vice president, and Dr. F. B. Dorsey, Jr., of Keokuk, secretary and treasurer. The meeting was held in Keokuk, Thursday, December 8.

Linn County

The next meeting of the Linn County Medical Society will be held in Cedar Rapids, Thursday, February 9, at which time John T. McClintock, M.D., head of the department of physiology, State University of Iowa, College of Medicine, Iowa City, will speak on The Present Status of the Physiology of the Gastro-Intestinal Tract.

Louisa County

The Louisa County Medical Society held its regular dinner meeting Thursday, December 8, at Oakville, and the following scientific papers were presented: Intestinal and Abdominal Diseases, E. P. Russell, M.D., of Burlington, and The Tularemia Epidemic, R. C. Ditto, M.D., of Oakville.

Marion County

The annual meeting of the Marion County Medical Society was held Thursday, December 8, in Knoxville, with the following program: President's Address, F. M. Roberts, M.D., of Knoxville; Diagnosis of Urologic Conditions, illustrated lecture, F. P. Ralston, M.D., of Knoxville; and Medical Care of Farm Security Administration Clients, Ernest E. Shaw, M.D., of Indianola, chairman of the State Society Medical Economics Committee. Officers elected at the business session are: Dr. E. C. McClure of Bussey, president; Dr. C. I. Fox of Pella, vice president; Dr. J. R. Wright of Knoxville, secretary and treasurer; Dr. C. S. Cornell of Knoxville, delegate, and Dr. D. S. Burbank of Pleasantville, alternate delegate.

Marshall County

Edward J. Harnagel, M.D., of Des Moines, and J. S. Coulter, M.D., of Chicago, were guest speakers for the Marshall County Medical Society at a meeting held Tuesday, December 6, in Marshalltown. Dr. Harnagel spoke on Evaluation of Disability, and Dr. Coulter addressed the group on Physical Therapy in the Treatment of Arthritis. Officers elected for 1939 are: Dr. Grove W. Harris, president; Dr. W. P. Marble, vice president; Dr. Rodney C. Wells, secretary and treasurer, and Dr. A. D. Woods of State Center, delegate.

Mills County

Officers selected by the Mills County Medical Society at a meeting held in Glenwood, Thursday, December 15, include: Dr. I. U. Parsons of Malvern, president; Dr. Edgar Christy of Hastings, vice president, and Dr. T. E. Shonka of Malvern, secretary and treasurer.

Muscatine County

Officers elected for the Muscatine County Medical Society at a meeting held in Muscatine, Tuesday, December 6, include: Dr. Walter Norem, president; Dr. T. M. Miller, vice president; Dr. E. O. Muhs, secretary and treasurer. All are of Muscatine.

Pocahontas County

The Pocahontas County Medical Society met in regular session Thursday, December 22, at the Court House in Pocahontas. Election of officers resulted as follows: Dr. F. E. Heathman of Pocahontas, president; Dr. W. E. Gower of Pocahontas, vice president; Dr. T. G. Herrick of Gilmore City, secretary and treasurer, and Dr. A. W. Patterson of Fonda, delegate.

T. G. Herrick, M.D., Secretary

Pottawattamie County

M. A. Blackenhorn, M.D., professor of medicine, University of Cincinnati, was guest speaker for the Pottawattamie County Medical Society, Monday, December 5, speaking on The Serum Treatment for Pneumonia.

Poweshiek County

The annual election for the Poweshiek County Medical Society was held Tuesday, December 13, in Grinnell, with the following results: Dr. P. E. Somers of Grinnell, president; Dr. E. B. Williams of Montezuma, vice president; Dr. C. E. Harris of Grinnell, secretary; Dr. J. T. Padgham, of Grinnell, treasurer, and Dr. S. D. Porter of Grinnell, delegate. Dr. Padgham presented a paper on The Anesthetic, and T. V. Niemann, M.D., of Brooklyn, spoke on Nephritis.

Van Buren County

At the regular meeting of the Van Buren County Medical Society held in Keosauqua, Thursday, December 15, the following were selected as officers for 1939: Dr. Roscoe Pollock of Douds-Leando, president; Dr. D. G. Matthews of Milton, vice president; Dr. C. R. Russell of Keosauqua, secretary and treasurer; Dr. Russell, delegate, and Dr. H. J. Gilfillan of Cantril, alternate delegate.

C. R. Russell, M.D., Secretary

Wapello County

Roland M. Klemme, M.D., of St. Louis, was the featured speaker at a meeting of the Wapello County Medical Society and the Wapello County Dental Association, held in Ottumwa, Wednesday, December 14. Dr. Klemme addressed the group on Trifacial Neuralgia.

Wayne County

Members of the Wayne County Medical Society met in regular session Tuesday, December 13, at the Cor-

bin Clinic in Corydon. Russell C. Doolittle, M.D., of Des Moines, presented the program of the evening, taking for his subject, Mental Diseases.

Webster County

Dr. Roland Stahr of Fort Dodge was re-elected to head the Webster County Medical Society for another year, at a meeting of that organization held in Fort Dodge, Thursday, December 22. Other officers, all of Fort Dodge, are: Dr. H. W. Scott, vice president; Dr. Harold T. Larsen, secretary and treasurer; Dr. J. H. Bruce, delegate, and Dr. Otto N. Glesne, alternate delegate.

Woodbury County

The annual meeting of the Woodbury County Medical Society was held Wednesday, December 7, at the West Hotel in Sioux City, with the following results: Dr. I. C. Vangsness, president; Dr. H. I. Down, president elect; Dr. R. J. Duling, vice president; Dr. W. H. Gibbon, secretary and treasurer; Dr. Charles P. McHugh, delegate, and Dr. A. C. Starry, alternate delegate.

Wright County

Officers named for 1939 at the annual meeting of the Wright County Medical Society held in Clarion recently are: Dr. H. P. Walker of Clarion, president; Dr. O. A. Kellogg of Dows, vice president, and Dr. J. R. Christensen of Eagle Grove, secretary and treasurer.

Iowa Urological Society

The annual meeting of the Iowa Urological Society was held at the University Hospital in Iowa City, Saturday, December 17. Nathaniel G. Alcock, M.D., and his staff presented a very instructive clinic during the morning. The afternoon program consisted of essays by Drs. Paul F. Olson of Dubuque, R. H. Flocks and R. J. Prentiss of Iowa City, H. W. Scott of Fort Dodge, G. D. Jenkins of Burlington, E. M. Honke of Sioux City, and A. G. Fleischman of Des Moines. Dr. H. W. Scott was named president, and Dr. F. H. Entz of Waterloo, secretary, for the ensuing year.

F. H. Entz, M.D., Secretary

PERSONAL MENTION

Dr. J. James Duffy, who has practiced for seven years in Denison, has moved to Los Angeles, California, where he has accepted an appointment as head surgeon at the Golden Gate State Hospital.

Dr. M. O. Larson, formerly of Alton, has returned from Chicago, where he was engaged in special postgraduate work in surgery, and has opened offices in Hawarden.

Dr. John H. Henkin, of Sioux City, addressed the Sioux City Rotary Club luncheon meeting, Monday, December 5, on "Socialized Medicine."

Dr. Robert M. Collins, of Council Bluffs, spoke before the local Kiwanis Club, Tuesday, December 13, at the Hotel Chieftain, on the subject, "Progress in Medicine."

Dr. James E. Kahler, formerly pathologist at The Mayo Clinic, Rochester, Minnesota, has accepted the position of pathologist for the Iowa Methodist Hospital, filling the vacancy created when Dr. Donald H. Kaump moved to Temple, Texas. Dr. Kahler was graduated in 1933 from the University of Pennsylvania, School of Medicine, Philadelphia, and has been connected with The Mayo Clinic for the past two and one-half years.

Dr. Raymond G. Bird, of Clarion, was speaker of the evening for a meeting of the Blaine Township Farm Bureau, Wednesday, November 30. Dr. Bird presented a discussion on the factors affecting attainable age of people, stressing particularly the question of immunization.

Dr. Earl V. Andrew, who was graduated in 1930 from the State University of Iowa, College of Medicine, Iowa City, and who has recently completed a postgraduate course at Cook County Hospital in Chicago, has located in Maquoketa, where he will enter the private practice of medicine.

Dr. Ernest E. Shaw, of Indianola, discussed "The National Health Program" for the Indianola Rural Forum, Tuesday, December 6, at the Smedley schoolhouse. The meeting was one of a series sponsored by the Warren County Rural Teachers Association.

Dr. Harry S. Bezman, formerly of Garrison, has purchased the office equipment of the late Dr. A. A. Crabbe in Traer, and has opened offices there for the practice of medicine. Dr. Bezman was graduated in 1934 from the University of Illinois, College of Medicine, and has been in Garrison for the past two years.

Dr. Ben C. Hamilton, Jr., of Jefferson, was recently appointed medical examiner of aeronautics in Iowa, one of eight men in the state to hold this position.

Dr. F. Harold Entz, of Waterloo, spoke before the Independence Rotary Club, Tuesday, November 29, on "Syphilis," and showed two reels of motion pictures in connection with his address.

Dr. James A. Craig, of Keosauqua, was guest speaker for the Keosauqua Business and Professional

Women's Club, at the Manning Hotel, Thursday, December 15. His subject was the organization of the state, county, and local boards of health, and their various duties.

DEATH NOTICES

Brinkman, John Edward, of Waterloo, aged sixty-four, died suddenly December 23, after a heart attack. He was graduated in 1898 from the Illinois Medical College, Chicago, and at the time of his death was a life member of the Black Hawk County and Iowa State Medical Societies.

Coleman, Jennie May, of Des Moines, aged seventy, died December 3 after a three year illness. She was graduated in 1898 from the State University of Iowa, College of Homeopathic Medicine, and at the time of her death was a life member of the Polk County and Iowa State Medical Societies.

Fegers, Robert Hubert, of Keokuk, aged fifty-six, died December 26, after a five weeks' illness of pneumonia. He was graduated in 1906 from the Keokuk Medical College, College of Physicians and Surgeons, and at the time of his death was a member of the Lee County Medical Society.

Peters, Richard A., of Tipton, aged seventy-five, died in Chicago, December 11, following an extended illness. He was graduated in 1884 from Rush Medical College, University of Chicago, and had long been a member of the Cedar County Medical Society.

Reiter, Alfred Ephraim, of Melcher, aged sixty-one, died December 8, after being in ill health for almost a year. He was graduated in 1901 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Marion County Medical Society.

Shipley, John Henry, of Rippey, aged seventy-two, died suddenly December 10 of a heart attack. He was graduated in 1889 from the Drake University College of Medicine, and at the time of his death was a life member of the Greene County and Iowa State Medical Societies.

Stookey, Calvin Grant, of Mechanicsville, aged seventy-three, died in Cedar Rapids, December 16, after a lingering illness. He was graduated in 1895 from the Illinois Medical College, Chicago, and at the time of his death was a member of the Cedar County Medical Society.

THE ST. LOUIS SESSION OF THE AMERICAN MEDICAL ASSOCIATION

Of interest to Iowa physicians will be the announcement of a recent meeting of the Council on Scientific Assembly of the American Medical Association, which carries advance news of the annual meeting of that organization to be held in St. Louis, May 15 to 19, inclusive.

The preliminary program will be printed in detail in the April 15 issue of the Journal of the American Medical Asociation, but conspicuous features of the program will be such topics as the new uses of sulfanilamide and its derivatives, the new work on the vitamins including the uses of nicotinic acid and Vitamin K and the Vitamin B complex, the progress which has been made in the treatment of pneumonia, and recent investigations on the endocrine glands and their functions. Several new ideas have been incorporated in the presentation of the scientific material. One of them is a panel discussion of pneumonia in infancy and childhood, in which the scientific knowledge will be brought out by discussion rather than by formally prepared manuscripts.

Another innovation will be combined meetings of various sections; for example, the pediatricians and the otolaryngologists in a session on pneumonia, and the physiologists and the neurologists in a discussion on the uses of sulfanilamide in conditions affecting the nervous system. The campaign on syphilis will have attention in a symposium in the section on dermatology and syphilology. In the section on preventive and industrial medicine and public health there will be a symposium on air conditioning and respiratory diseases, and in the section on urology, a special symposium on the use of new endocrine derivatives.

Especially important as a part of the annual session of the American Medical Association is the close relationship between the scientific exhibit and the presentation of manuscripts in the scientific sections. For several years those who present new contributions in the various sections have had an opportunity to exhibit the actual materials with which they worked, in the form of case records, microscopic slides, charts, diagrams and other material. The author of the manuscript is thus enabled to demonstrate at first hand to physicians who are especially interested, the details of his work, forming for those who attend the session a magnificent postgraduate opportunity not available in any other way. The popularity of this feature is apparent from the fact that great numbers of physicians spend almost their entire time during the week in the scientific exhibit hall. Moreover, every year there are increased requests for more time to be allowed for attendance on the scientific exhibit.

All indications are that the 1939 session of the American Medical Association will be one of the most successful and best attended meetings on record, and those Iowa practitioners who are planning to be there, are urged to make arrangements for their accommodations at an early date.

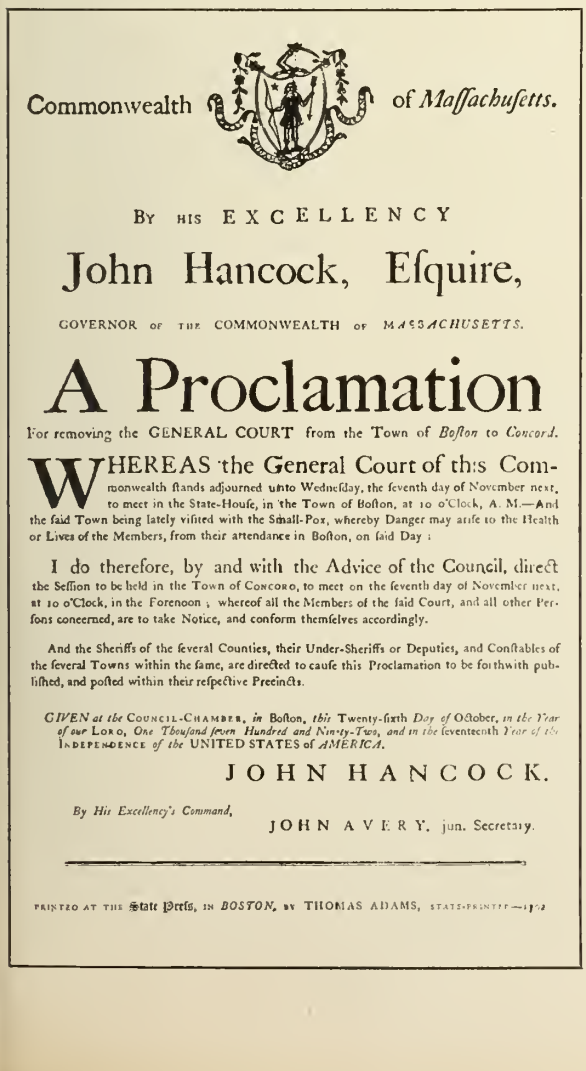
History of Medicine in Iowa

Edited by the Historical Committee

Dr. Frank M. Fuller, Keokuk
Dr. John T. McClintock, Iowa City
Dr. R. T. Lenaghan, Clinton
Dr. Tom B. Throckmorton, Des Moines
Dr. Walter L. Bierring, Des Moines
Dr. William Jepson, Sioux City

Two Historical Documents Related to Smallpox

The accompanying illustration is the proclamation of John Hancock, governor of Massachusetts, removing the General Court from the town of Boston to Concord, because said town had been lately visited by smallpox. It is dated the twenty-sixth day of October, 1792. This document is the property of Mr. Mayo Tolman, Director of Vital Statistics, Iowa State Department of Health, having descended to him from his ancestor, Mr. Thomas Adams, whose name appears on the proclamation.



Commonwealth of *Maſſachuſetts.*

By his EXCELLENCY

John Hancock, Eſquire,

GOVERNOR of the COMMONWEALTH of *MASSACHUSETTS.*

A Proclamation

For removing the GENERAL COURT from the Town of *Boſton* to *Concord.*

WHEREAS the General Court of this Commonwealth ſtands adjourned unto Wedneſday, the ſeventh day of November next, to meet in the State-Houſe, in the Town of Boſton, at 10 o'Clock, A. M.—And the ſaid Town being lately viſited with the Small-Pox, whereby Danger may ariſe to the Health or Lives of the Members, from their attendance in Boſton, on ſaid Day:

I do therefore, by and with the Advice of the Council, direct the Seſſion to be held in the Town of CONCORD, to meet on the ſeventh day of November next, at 10 o'Clock, in the Forenoon; whereof all the Members of the ſaid Court, and all other Perſons concerned, are to take Notice, and conform themſelves accordingly.

And the Sheriffs of the ſeveral Counties, their Under-Sheriffs or Deputies, and Conſtables of the ſeveral Towns within the ſame, are directed to cauſe this Proclamation to be forthwith publiſhed, and poſted within their reſpective Precincts.

GIVEN at the COUNCIL-CHAMBER, *in* Boſton, *this* Twenty-ſixth *Day of* October, *in the Year of our* LORD, *One Thouſand ſeven Hundred and Ninety-Two, and in the* ſeventeenth *Year of the* INDEPENDENCE *of the* UNITED STATES of *AMERICA.*

JOHN HANCOCK.

By His Excellency's Command,

JOHN AVERY, jun. Secretary.

PRINTED AT THE State Preſs, IN *BOSTON*, BY THOMAS ADAMS, STATE-PRINTER.—1792

A LETTER OF EDWARD JENNER CONTAINING A BRIEF ACCOUNT OF HIS DISCOVERY OF VACCINATION

We are privileged to publish from a reprint furnished by Dr. Charles N. McBryde, M.D., of the United States Bureau of Animal Industry, Experimental Station, Ames, Iowa, a communication read before the March 8, 1915, meeting of the Johns Hopkins Hospital Historical Club. It was published in the Johns Hopkins Hospital *Bulletin* of June, 1916,* as follows:

"The communication I have to present this evening consists of a letter which was found among some old family papers. The letter was written by Edward Jenner, the discoverer of vaccination, to my great-grandfather, John Bolton, who at the time was a prominent citizen of Savannah, Georgia. In the years 1802 to 1806, Mr. Bolton and his wife, who is referred to in the Jenner letter, spent some time in traveling abroad. During a visit to England in 1805, Mr. Bolton appears to have placed himself under the professional care of Dr. Jenner, who had then achieved a conspicuous place in the medical world of the day. Mr. Bolton was in London at the time he received the letter and had evidently consulted Jenner at Cheltenham at an earlier date, probably a short time previously. The first portion of the letter, that is, the letter proper, is of a purely personal nature, pointing out the probable origin of Mr. Bolton's ailment and giving rather full and explicit directions in regard to diet and exercise. The second portion of the letter, or rather the

*In this publication a photostatic copy of Dr. Jenner's letter was also included.

postscript, which is somewhat longer than the letter itself, and deals with the subject of Jenner's great discovery, is the part of especial interest. I shall, however, give you the whole letter, as it will doubtless be of interest to most of you to hear Dr. Jenner's advice in regard to diet and exercise and it may also be of interest to some of you to speculate on the probable nature of the complaint for which Dr. Jenner prescribes. In this connection I will state that Mr. Bolton was 31 years of age at the time. That the ailment from which he suffered was not of a serious nature is attested by the fact that he lived for 33 years thereafter, attaining the age of 63 years, but perhaps this was due to the fact that he was careful to follow out the course of life laid down for him by the 'father of vaccination.' The letter, while perfectly legible, is considerably worn and hardly in condition to pass among the audience. I have therefore had lantern slides made from it and will have these thrown on the screen. I will read the letter slowly and feel sure you will have no difficulty in following it on the screen.

"The letter was folded and sealed with a black wafer. It is addressed to 'John Bolton, Esqr., York Hotel, New Bridge Street, Black Friars, London.' It is stamped 'Cheltenham 10 D' and is postmarked 'Sept. 26, 1805.' The letter is as follows:

Cheltenham Sept 8th 1805

My dear Sir

After maturely considering the nature of your complaints, I am strongly induced to think that all of them arise from a debilitated state of the stomach & bowels. What then is to be done to recall that suspended energy which is so essential not only to life itself but to that correct movement of the vital organs in general, on which the comforts of life depend? This I shall endeavor to point out. Some medicinal treatment will certainly be necessary, but this will not be so essential as the strict observance of the rules of diet; the former indeed unaided by the latter will in my opinion be of little avail. Recollect then my injunctions when at Cheltenham. To be very sparing in the use of such food as experience tells us has a tendency to become either acid or flatulent, such as Garden Vegetables in general, Fruit, Pastry, melted butter, beer & cider etc. & in their stead to live chiefly on such food as will not only afford more nutrition but give less disturbance during digestion. Of this description is animal food. You need not be very choice in your selection—past experience will point out that which agrees best with you. Exercise is very conducive to digestion, and this you will take either on foot or Horseback in a regular way. But you must avoid those exertions which will bring on any great degree of lassitude. I know nothing so likely to correct your costive habit as the artificial Cheltenham Water prepared with the chalybeated Cheltenham Salts—& nothing so proper as opium if at any time you should feel the spasm that has so long annoy'd you, in any degree of violence. Enclos'd is a Prescription for the Chalybeate I mentioned, and from its use in conjunction with other restorative means pointed out, I expect you will derive that amelioration in the state of your health which will afford me pleasure to hear of on a future day. This medicine will keep well in a vial—you may take forty grains of it twice a day mixt with any thick substance, such as Honey, Molasses or gruel. I have also enclos'd a Prescription for Mrs Bolton, from which I trust she will derive great advantage, and if she could bring herself to relish a diet of a kind similar to that I have recommended to you, I feel confident of its proving essentially useful to her.

Believe me dear sir, with every good wish your obliged and very faithful humble servant

Edwd Jenner

P. S. The greater part of this letter was written when dated; but from a series of unavoidable interruptions I have be(en) driven to the necessity of not finishing it till now. I trust it will reach you before you leave England.

You were good enough to express a wish during our conversation on the subject, to be acquainted with my History as far as relates to the vaccine discovery. I will therefore give you the following outline. Pray make what discretional use of it you please, but dont publish it; at least dont print it, as I think it would dishonor my country.

Near thirty years ago, my researches into the nature of the Vaccine disease commenc'd. Although much accustomed from my earliest years to the investigation of subjects in Natural History, I found this so involv'd in obscurity, so intricate and complex that I did not develop it to my complete satisfaction till the year 1798, when, in a publication, entitled "An Inquiry into the causes and effects of the Variolæ Vaccinæ or Cowpox" I immediately laid the whole before the world. My situation at this time was that of a physician in full and lucrative practice in my native County, Glostershire. But being necessitated to quit my situation in the country and live in London in order to establish the new practice, my increas'd expenses and the separation from my former professional income reduced my possessions from a state of plenty to that state which gave me some alarm. In this situation I made an application to Parliament and was heard. £10'000 was the sum proposed by one member as a compensation and 20'000 by another. The lesser sum was voted, the minister, Mr. Addington, alleging that he should certainly have consented to a grant of the larger sum but was well convinced that my practice in town would speedily and amply remunerate me. I made the Trial and according to my own expectations, failed. It could not well be otherwise, as I had concealed nothing, but on the contrary took the greatest pains during my residence in Town to make everyone as good a Vaccine Inoculator as myself. Whereas, had I (looking forward to the amassing of Riches more than diffusing the incalculable advantages of

the Discovery) kept it a secret, my Fortune might have been made to any extent. This opinion was given in evidence before the Committee of the House of Commons by some of the first medical Gentlemen in the Metropolis.

I am now again a Resident for the most part in Glostershire, and from a combination of circumstances which I need not detail am doom'd to feel the pressure of an expense of more than £500 per annum without scarcely any provision being made for me, the vote of Parliament having done little more than make up the losses and expenses incur'd in the prosecution of that Inquiry which led to the fortunate discovery and establishment of Vaccine Inoculation, a discovery which I trust I may be allowed exultingly to say will add more to the stock of human happiness than any that has preceded it.

E. J.

"Just a few words in closing as to why Jenner took pains to set forth these facts in regard to his discovery and why he admonished Mr. Bolton not to publish the letter. The tone of the letter shows very clearly that Jenner at this time was much dissatisfied with the grant of £10,000 awarded him by Parliament and that he regarded this sum as an inadequate reward for the time and labor he had spent in prosecuting his investigations, which, as he states in the letter, covered a period of 30 years and had placed him under heavy expense, hence his admonition not to publish the letter for fear it would reflect upon his country. This feeling of bitterness toward his country was doubtless afterward dissipated when Parliament, recognizing his just deserts, made him a second grant of £20,000 in 1807. Furthermore, at about this time his friends and admirers in other parts of the world were endeavoring to raise popular subscriptions in his behalf, in order to testify their appreciation of the value of his great discovery. Thus, in 1812, he received a subscription of £7383, which was raised in India where his discovery had been gratefully received. A similar undertaking was set on foot in France by Dr. Valentine, of Nancy, a friend and admirer of Jenner's, but this effort appears to have come to naught. It seems not improbable that Mr. Bolton may have had some plan of this sort in mind for the United States, where at this time vaccine inoculation had become well established, thanks to the efforts of Dr. Waterhouse, President Jefferson and others. The fact that Jenner prefaces the outline of his discovery with the words 'pray make what discretional use of it you please,' suggests that Mr. Bolton in the course of his conversation with Jenner at Cheltenham may have indicated that he could make use of these facts in America. This is mere supposition, however, and I do not know whether any steps were ever taken looking toward a popular subscription in this country.

"As far as I know Jenner's request has been respected and this letter has never been published, but in view of the fact that he finally received an adequate reward from his government and became the recipient of innumerable honors, both at home and abroad, there is certainly now no fear that his country will suffer criticism from its publication."

COMING MEETINGS

Because we feel that many of the members of the Iowa State Medical Society may be interested in a number of national and special meetings, we are herewith publishing a calendar of the aproaching sessions. More detailed information may be secured from the Journal office.

American College of Physicians, March 27 to 31, 1939, New Orleans, Louisiana. Secretary, Mr. E. R. Loveland, 4200 Pine Street, Philadelphia, Pennsylvania.

Eighty-eighth Annual Session, Iowa State Medical Society, April 25 to 27, 1939, Des Moines, Iowa. Secretary, Dr. Robert L. Parker, Des Moines, Iowa.

American Medical Association, May 15 to 19, 1939, St. Louis, Missouri. Secretary, Dr. Olin West, 535 North Dearborn Street, Chicago, Illinois.

American Board of Obstetrics and Gynecology. General oral, clinical and pathological examinations for all candidates (Groups A and B) will be conducted by the entire board, meeting in St. Louis, Missouri, on May 15 and 16, 1939, immediately prior to the annual meeting of the American Medical Association. Application for admission to Group A examinations must be on file in the secretary's office by March 15, 1939. Secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pennsylvania.

American Board of Ophthalmology. Examinations for 1939 are scheduled as follows: written, March 15 and August 5; oral, May 15, St. Louis, and October 6, Chicago. Applications for permission to take the written examination March 15, must be filed with the secretary not later than February 15. Secretary, Dr. John Green, 6830 Waterman Ave., St. Louis, Missouri.

Fourth Annual Postgraduate Institute of the Philadelphia County Medical Society, March 13 to 18, 1939, Bellevue-Stratford Hotel, Philadelphia, Pennsylvania. Subject, Blood Dyscrasias and Metabolic Disorders. Director, Rufus S. Reeves, M.D., Twenty-first and Spruce Streets, Philadelphia, Pennsylvania.

First American Congress on Obstetrics and Gynecology, September 11 to 15, 1939, Cleveland, Ohio. Address secretary at 650 Rush St., Chicago, Illinois.

Third Congress of the Pan-Pacific Surgical Association, September 15 to 28, 1939, Honolulu, Hawaii. Sail from Los Angeles, September 7, or San Francisco, September 8. Address Dr. George W. Swift, 902 Boren Avenue, Seattle, Washington; or Dr. Forrest J. Pinkerton, Young Building, Honolulu, Hawaii.

Fifth Annual Meeting of the Mississippi Valley Medical Society, September 27 to 29, 1939, Burlington, Iowa. Secretary, Dr. Harold Swanberg, Quincy, Illinois.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

APPLIED ANATOMY—By Robert H. Miller, M.D., associate professor of anatomy, University of Tennessee, College of Medicine. Lea and Febiger, Philadelphia, 1938. Price, $6.50.

DISEASES OF THE CHEST AND THE PRINCIPLES OF PHYSICAL DIAGNOSIS—By George W. Norris, M.D., formerly professor of clinical medicine, University of Pennsylvania; and H. R. M. Landis, M.D., formerly professor of clinical medicine, University of Pennsylvania. Sixth edition. W. B. Saunders Company, Philadelphia and London, 1938. Price, $10.00.

DR. COLWELL'S DAILY LOG FOR PHYSICIANS—A brief, simple, accurate financial record for the physician's desk. Colwell Publishing Company, Champaign, Illinois, 1938.

ENDOCRINE THERAPY IN GENERAL PRACTICE—By Elmer L. Sevringhaus, M.D., professor of medicine, University of Wisconsin. The Year Book Publishers, Chicago, 1938. Price $2.75.

INTERNAL MEDICINE: ITS THEORY AND PRACTICE—Edited by John H. Musser, M.D., professor of medicine, Tulane University of Louisiana, School of Medicine. Third edition, thoroughly revised. Lea and Febiger, Philadelphia, 1938. Price, $10.00.

PLASTIC SURGERY—By Arthur Joseph Barsky, M.D., D.D.S., associate surgeon in charge of the Department of Reconstructive Surgery, Beth Israel Hospital, New York, N. Y. Illustrated. W. B. Saunders Company, Philadelphia and London, 1938. Price, $5.75.

HUMAN PATHOLOGY—By Howard R. Karsner, M.D., professor of pathology, Western Reserve University, Cleveland, Ohio. Fifth edition, revised. J. B. Lippincott Company, Philadelphia and London, 1938. Price, $10.00.

THE PNEUMONIAS—By Hobart A. Reimann, M.D., professor of medicine, Jefferson Medical College, Philadelphia. W. B. Saunders Company, Philadelphia and London, 1938. Price, $5.50.

PRACTICAL MICROBIOLOGY AND PUBLIC HEALTH—By William Barnard Sharp, M.D., professor of bacteriology and preventive medicine, Medical Department of the University of Texas. Illustrated. The C. V. Mosby Company, St. Louis, 1938. Price, $4.50.

THE PRINCIPLES AND PRACTICE OF OBSTETRICS—By Joseph B. DeLee, M.D., professor of obstetrics and gynecology, emeritus, University of Chicago. Seventh edition, entirely reset. W. B. Saunders Company, Philadelphia and London, 1938. Price, $12.00.

SURGICAL PATHOLOGY—By William Boyd, M.D., professor of pathology, University of Toronto. Fourth edition, thoroughly revised. W. B. Saunders Company, Philadelphia and London, 1938. Price, $10.00.

THE 1938 YEAR BOOK OF PHYSICAL THERAPY—Edited by Richard Kovács, M.D., clinical professor and director of physical therapy, New York Polyclinic Medical School and Hospital. The Year Book Publishers, Chicago, 1938. Price, $2.50.

BOOK REVIEWS

PLASTIC SURGERY

By Arthur Joseph Barsky, M.D., D.D.S., associate surgeon in charge of the Department of Reconstructive Surgery, Beth Israel Hospital, New York. Illustrated. W. B. Saunders Company, Philadelphia and London, 1938. Price, $5.75.

This book, the first general textbook on plastic surgery which has appeared in many years, seems to fill a long felt need. It is up to date and adequately covers its subject, which is the entire body.

The fundamentals of plastic surgery are given, as well as the operative technic for the repair of special conditions. The first part deals with the underlying general principles, after which the author proceeds in an orderly fashion to take up the repair of specific problems. In addition, it deals with some unusual aspects of associated problems. The psychologic aspect of the disfigured patient is touched upon, a subject which one hears referred to all too seldom. There is an unusual chapter upon the orthopedic aspects of plastic surgery. Without being dogmatic, the book tries to give the reader the benefit of the author's experience. Thus, many times, instead of describing numerous operations for the repair of a certain type of disfigurement or deformity, one or possibly two operations are described, those which the author believes to be the most efficacious.

Throughout the volume the author stresses necessary details and avoids non-essential data. Without being verbose, the basic details are clearly stated in the text and supplemented by many effective drawings and photographs. The index is thorough and complete.

Any practitioner who is called upon to do any plastic surgery will do well to read this book. Indeed it is not too much to say that it should be an informative and important volume in the library of the general surgeon and the specialist.

L.H.L.

THE PATHOLOGY OF DIABETES MELLITUS

By Shields Warren, M.D., assistant professor of pathology, Harvard Medical School, Boston. Second edition, revised. Lea and Febiger, Philadelphia, 1938. Price, $4.75.

This book is a revised edition on the pathology of diabetes. It contains a foreword written by Dr. Elliot P. Joslin. The contents are based upon more than five hundred careful, complete autopsies as well as many biopsies performed upon diabetic individuals.

The work is exceptionally complete, containing a chapter on the pathologic effects of insulin administration, which should be read by physicians using insulin shock therapy. Chapters dealing with the pituitary, adrenal, and other endocrine glands are included. Medicolegal aspects of diabetes and the pathologic changes in every system, skin, heart, brain, kidneys, etc., are described in detail.

The book should be read and studied by all physicians who treat the diabetic patient. E.B.W.

THE PRACTICE OF UROLOGY

By Leon Herman, M.D., professor of urology, University of Pennsylvania, Graduate School of Medicine. W. B. Saunders Company, Philadelphia and London, 1938. Price, $10.00.

This volume is a comprehensive and up to date treatise on the subject of urology, written by an acknowledged authority in the field. A particularly outstanding feature is the fact that it is one of the first books on urology which deals adequately with gonorrhea, six chapters being devoted to this one topic. Mandelic acid and sulfanilamide are thoroughly discussed and explained, although one assumes that the author by this time may have revised his conservative attitude toward this drug in view of the more recent advances in sulfanilamide therapy. One is impressed by Dr. Herman's style of omitting unnecessary anatomic details, and appreciative of the manner in which he mentions only the salient points of treatment. In common with the majority of books on urology, the female urethra is dealt with far too lightly.

The text is highly recommended for both the general practitioner and the specialist; the subjects are treated so as to give valuable general information, and yet the various methods of treatment are outlined in enough detail to prove worthwhile to the specialist in this field. E.L.M.

MATERIA MEDICA, DRUG ADMINISTRATION AND PRESCRIPTION WRITING

By Oscar W. Bethea, M.D., professor of clinical medicine, Tulane School of Medicine. Fifth revised edition. F. A. Davis Company, Philadelphia, 1938. Price, $5.00.

This is the fifth edition of this standard text, revised to conform to the United States Pharmacopoeia XI and the National Formulary VI.

The volume is composed of three parts. The first part consists of the official and unofficial drugs arranged alphabetically with a discussion of therapeutic action and uses. Part two is devoted to prescription writing and is a detailed presentation of the subject. The third part contains illustrations of correct and incorrect prescriptions.

This is a valuable and authoritative reference book for the physician, well arranged and concisely written. D.K.

UROLOGY

By Daniel N. Eisendrath, M.D., assistant professor of surgery (genito-urinary) Rush Medical College of the University of Chicago, and Harry C. Rolnik, M.D., formerly clinical professor of urology, Loyola University Medical School. Fourth Edition, entirely revised and reset. J. B. Lippincott Company, Philadelphia, 1938. Price, $10.00.

This volume of 1,032 pages provides a comprehensive study of urology. It is complete, well written, carefully systematized as to table of contents and terminal index, and abounds with generous black and white illustrations in addition to a dozen color plates. Obviously, the authors had in mind a text, not only for the student, but a practical reference for the general practitioner. They have performed their task well, and the volume is a worthy successor to the editions which have preceded it.

As in other fields of medicine during the passing decade, a number of changes have occurred in urology: chemotherapy in the control of urogenital infections, changes of surgical technic in the management of prostatic obstruction and an altered public viewpoint concerning the specific infections. Even so, it is doubtful whether this would justify the numerous editions by various writers who are now burdening a tolerant medical public with an excess of literature. When a urologic problem arises we will, by choice, find ourselves reaching for this book. W.R.H.

THE BUSINESS SIDE OF MEDICAL PRACTICE

By Theodore Wiprud, executive secretary of the Medical Society of Milwaukee County. W. B. Saunders Company, Philadelphia and London, 1937. Price, $2.50.

This is an excellent book, written by a man who has been in close contact with a large number of physicians, who knows their business shortcomings and their professional idiosyncrasies.

The contents consist of clear and concise discussions of office management, financial records, case records, collection of accounts, investments, legal aspects of medical practice, preparation of papers, public speaking, relations with the public and relations with physicians.

This is by far the best book the reviewer has read on the business aspect of medical practice. It cannot fail to give the physician a clearer picture of his mistakes and indicate methods to correct them. D.K.

THE PHYSICIAN'S BUSINESS

By George D. Wolf, M.D., attending otolaryngologist, Sydenham Hospital, New York. J. B. Lippincott Company, Philadelphia and London, 1938. Price, $5.00.

This volume is a presentation of the practical and economic aspects of the practice of medicine, a topic which heretofore has received little attention in medical literature. The subject matter will prove of interest to the medical student, the physician who is about to enter practice, and even the "old guard" will find much of practical value.

The chief value of the book is a discussion of the business of being a doctor, the function of the office, fees, collections, relations to the patient, relations with fellow practitioners, etc. A large section of the text is devoted to the planning and equipping of an office and the selection of office personnel. There are brief but incomplete chapters on insurance and income tax.

Certainly a book of this nature has a place in the library of the physician. D.K.

THE VITAMINS AND THEIR CLINICAL APPLICATION

By Prof. Dr. W. Stepp and Dr. H. Schroeder, University of Munich. Translated by Herman A. H. Bouman, M.D., Minneapolis, Minnesota. The Vitamin Products Company, Milwaukee, Wisconsin, 1938.

This volume presents, in more or less of an outline form, the present knowledge of the vitamins. Each of the vitamins is discussed from the standpoint of history, chemistry, occurrence, manifestations of deficiency, absorption, requirement, various preparations and dosage, and the clinical application.

It is an informative volume but one is impressed with the failure to differentiate between proved clinical application and the result of animal experimentation. However, in the study of this volume one may obtain a general knowledge of the various accessory food factors. An excellent bibliography is appended to the text.

D.K.

DISEASES OF THE SKIN

By Oliver S. Ormsby, M.D., clinical professor and chairman of the department of dermatology, Rush Medical College of the University of Chicago. Fifth edition, enlarged and revised. Lea and Febiger, Philadelphia, 1937. Price, $12.00.

This is the fifth edition of this classic text, revised and enlarged. Twenty new diseases are described and the entire subject matter has been brought up to date.

The concise descriptions of the various skin conditions make this a valuable addition to the physician's library, and the profusion of illustrations will aid in the recognition of dermatologic conditions. The subject matter is taken up under the classifications of hyperemias and inflammations, hemorrhages, hypertrophies, atrophies, pigment anomalies, new growths, chronic specific inflammations, neuroses, parasitic infections, and diseases of the appendages.

The volume has a definite place in the library of the general practitioner as well as the dermatologist.

D.K.

DISEASES OF THE SKIN FOR PRACTITIONERS AND STUDENTS

By George Clinton Andrews, M.D., associate professor of dermatology, College of Physicians and Surgeons, Columbia University. Second edition, entirely reset. W. B. Saunders Company, Philadelphia and London, 1938. Price, $10.00.

Andrews has completely revised and rewritten most of the material which appeared in the first edition of this book. In addition there are many new chapters, and seventy-five new diseases have been described. There are new chapters on filterable viruses, vitamin deficiencies, and cutaneous infiltration with products of metabolism. Newer methods of treatment as well as more recent remedies and prescriptions have been described and evaluated. However, accepted methods of treatment are adhered to and the author retains his conservative attitude toward the unproved substances. For example, mapharsen is dismissed with the statement: "Further observation of thoroughly treated patients will be necessary in order to evaluate the drugs in terms of clinical cure."

The chapters on roentgen rays, syphilis, eczema, fungus diseases, lichen planus and tropical diseases have been rewritten completely. The chapter on syphilis is unusually complete. Allergy is given a place of importance. The chapter on industrial dermatoses is somewhat brief considering the growing importance of this hazard.

The photographs, microphotographs and drawings with which the first book was so profusely illustrated have been augmented and improved by substitution and addition of newer and better illustrations. The pleasing manner of presentation of the first edition is maintained and much has been done to make the subject more interesting and practical. J. W. Y.

THE PRACTICE OF MEDICINE

By Jonathan Campbell Meakins, M.D., LL.D., professor of medicine, director of the Department of Medicine, McGill University. Second edition. The C. V. Mosby Company, St. Louis, 1938. Price, $12.50.

Carrying out the stated purpose of this new text of medicine the author approaches each group of diseases with a discussion of the pathologic physiology responsible for the symptomatology. For example, we find preceding the cardiovascular diseases, a general discussion of dyspnea, Cheyne-Stokes respiration, edema, palpitation, cough, hemoptysis, cyanosis, etc. Following this is the usual descriptive text of individual cardiovascular diseases. It is the reviewer's impression that this feature is very valuable and one which aids in understanding and correlating the symptoms with the disease processes present.

The author stresses the graphic and diagrammatic presentations of many subjects which give in many instances a clearer description of the disease than the written portion of the text. An example might be the color sketch of a child with acrodynia. There is a wealth of color plates in all sections, but especially in that portion dealing with hematologic diseases. For a standard text on medicine, treatment is surprisingly current. Such recent advances as the use of rabbit sera for all types of pneumonia, sulfanilamide in Malta fever and nicotinic acid in pellagra, are examples picked at random. One criticism occurs to the reviewer. It is confusing not to have the individual disease or symptom listed at the head of each page.

The author has achieved the purpose of the text as stated in his preface, and all practitioners can use to advantage this practical work on medicine.

J. S. M.

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BRAIN TUMORS IN CHILDREN*†

PAUL C. BUCY, M.D., Chicago

That tumors of the brain constitute an all too prevalent scourge of mankind is at last being commonly appreciated, but that they are prevalent during childhood as well as during adult life is not yet fully realized. Furthermore, a defeatist attitude toward these tumors is still the rule. Some recent, apparently authoritative, publications have only served to further a feeling of hopelessness and helplessness about them. For example Scott[8] has made the unqualified and equally incorrect statement that with brain tumors in children "The prognosis is always poor". Van Wagenen[9] and Cairns[5] have demonstrated that the outlook in cases of brain tumor is by no means so dark. Cairns found that of 157 patients operated upon during one year in Dr. Cushing's clinic, 40 per cent were alive seven to nine years later and 23.5 per cent were living "useful" lives. These were, however, predominantly adults. Accordingly Bailey, Buchanan and the author[3] have recently reviewed one hundred consecutive cases of verified tumor of the brain in children, fifteen years of age or younger. These one hundred patients have been seen and operated upon in the University of Chicago Clinics in the nine years preceding January, 1938, and this article presents the salient features of this study.

Tumors of the brain tend to predominate during three separate age periods. The first has its peak between seven and eight years of age, the second at about thirty to thirty-two and the third at forty-five to forty-seven years of age[4]. The types of tumor are different in each group. Thus the malignant glioma of the cerebrum, the glioblastoma multiforme, is the more common in the older group; the meningioma and pituitary adenoma usually first give rise to symptoms at the age of thirty to thirty-five years. Entirely different tumors are found in childhood, and although benign meningiomas, pituitary adenomas and cerebral gliomas may occur they are distinctly rare. The most common tumors at this age are cerebellar astrocytomas, malignant tumors (medulloblastomas and meningeal sarcomas) of the posterior midline of the cerebellum, ependymomas of the fourth ventricle, gliomas (usually spongioblastomas) of the pons, and a variety of tumors in and about the third ventricle (craniopharyngiomas, spongioblastomas and other gliomas of the optic chiasm and hypothalamus, pineal tumors, etc.). It is obvious that the majority of these tumors lie in the cerebellar fossa. Of our one hundred cases, sixty-six were so located. Of the thirty-four tumors located above the tentorium, the majority lay in and about the third ventricle.

PONTINE GLIOMAS

Gliomas of the brain stem, usually involving the pons primarily, are far more prevalent than has been realized. In our series we were able to verify twelve tumors of this type, but since these tumors are not benefited by operation, at least eight cases in which we were confident of a correct diagnosis, passed through our hands without verification at operation or necropsy. It would thus appear that these tumors form some 15 to 20 per cent of all intracranial tumors in childhood. In the past these cases have rarely been recognized clinically, but have usually been erroneously diagnosed as encephalitis. They do not give rise to increased intracranial tension, except very late in their course, and consequently those symptoms—headache, enlargement of the head, failing vision and choking of the optic discs—which are common with other intracranial tumors are not prominent here. Vomiting, however, frequently occurs, but as a result of the direct involvement of the medullary centers rather than from intracranial hypertension. The other common manifestations of these tumors are first, involvement of the various cranial nerves; second, paralyses from des-

*From the Division of Neurology and Neurosurgery, University of Chicago.

†Presented before the Medical Forum, Des Moines, Iowa, November 7, 1938.

truction of the pyramidal tracts; and third, cerebellar dysfunction.

The cranial nerves most frequently involved are the sixth nerves supplying the external rectus muscles of the eyes, and thus crossing of the eyes is one of the earliest and most common complaints. Facial paralysis and paralysis of the muscles of mastication may occur. Paralysis of the musculature of the pharynx and larynx produce alterations in the voice and difficulty in swallowing with choking and the regurgitation of fluids through the nose. Involvement of the acoustic and vestibular nerves is uncommon. Involvement of the long fiber tracts in the brain stem is manifested,

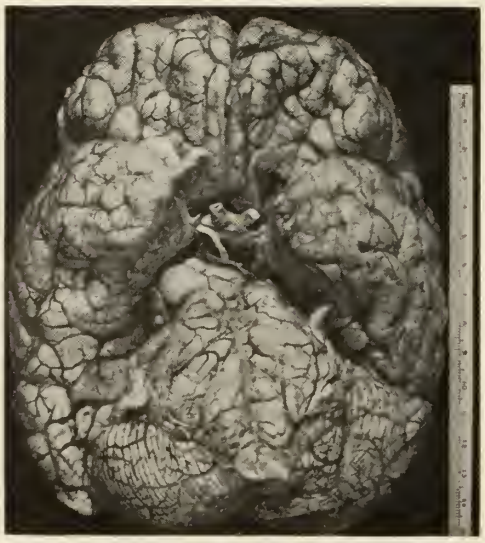


Fig. 1. Glioma of the pons. Note the marked nodular enlargement of the pons. Compare with the normal pons in Figure 5.

usually only by paralyses, increase in the tendon reflexes and Babinski's sign. The paralysis may involve any one or more of the four extremities at the onset but with the progress of the disease a quadriplegia is approached. Sensory changes are rarely found and in only one of the verified cases was any sensory change, a hemihypesthesia, present. Signs of cerebellar dysfunction appear in at least half of the cases and though usually the result of involvement of the cerebellar peduncles, are in some cases due to actual invasion of the cerebellum itself. Nystagmus is the rule. Flaccidity (hypotonia) of the extremities, ataxia, and intention tremor are the usual findings in this sphere. The combination of pyramidal and cerebellar involvement in these cases is such that over half of our patients were unable to stand or walk at the time of admission to the hospital.

That this combination of symptoms in patients without increased intracranial tension, who are not infrequently subject to periods of stupor or even coma, should usually result in the diagnosis of encephalitis is perhaps not surprising. However, as Bailey[2] has pointed out, such errors are, in the light of modern knowledge, no longer justifiable. Encephalitis of the brain stem, aside from the occasional cranial nerve palsies which appear as complications of diphtheria, is practically unknown. In almost every recorded case presumed to be an encephalitis of this type, verification of the pathology is wholly lacking. Whenever one is confronted by such a syndrome as that outlined above, a pontine glioma is the most likely diagnosis and the presence of fever or an increase in the cells of the spinal fluid is not sufficient to alter such a likelihood.

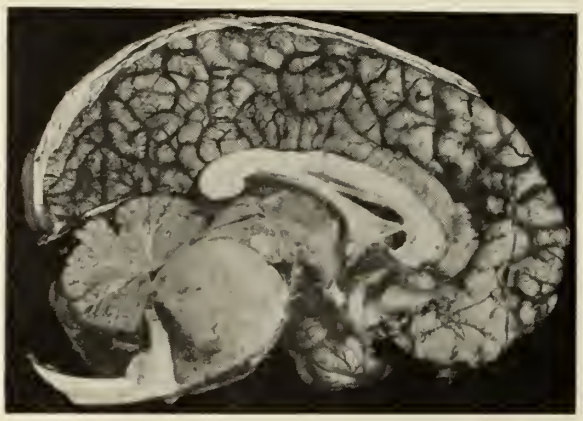


Fig. 2. Glioma of the pons cut sagittally showing the tremendous enlargement of the brain stem. Compare with the normal pons in Figure 7.

INCREASED INTRACRANIAL PRESSURE

The other common intracranial tumors of childhood usually give rise rather early in their course to the signs and symptoms of intracranial hypertension. Of these vomiting is one of the earliest and most persistent. At the onset vomiting occurs most frequently on or shortly after arising in the morning. Later it may occur at any time, either with or without any apparent relationship to meals. Any child who suffers from recurrent attacks of vomiting, particularly if they tend to occur in the early morning and are increasing in frequency, should be strongly suspected of being the victim of an intracranial tumor. As previously noted, gliomas of the brain stem and other tumors situated near the medulla oblongata may give rise to vomiting as a result of direct compression before any evidence of increased intracranial pressure is present. Headache, in contrast to the vomiting and to related conditions in adults, is often not a prominent symptom for two reasons: first, chil-

dren are far less prone to complain and less able to make their discomforts known than adults; and second, the cranial sutures separate, and the skull enlarges, providing a spontaneous decompression. This enlargement of the head results in many findings more or less typical of these cases. Often the head is noticeably enlarged but this is commonly recognized only late in the course of the disease. The veins of the scalp become distended. The separated sutures may be palpated. Percussion of the skull gives rise to a peculiar note, the cracked-pot sound or Macewen's sign, comparable to that elicited from cracked pottery. Roentgenograms of the skull in such cases reveal a separation of the sutures. With the rapidly growing malignant tumors of the cerebellum there are no other roentgenologic findings; but with the more slowly growing benign astrocytomas of the cerebellum, digital or convolutional markings on the inner table of the cranial vault, enlargement of the sella turcica, erosion of the clinoid processes and distension of the cerebellar fossa are common.

Unfortunately children rarely complain of failure of vision until their sight is almost gone. This only occurs late in the course of the disease at a time when the preservation of serviceable vision is usually no longer possible. Even before such a complaint has been voiced, however, choking of the optic discs can usually be found on ophthalmoscopic examination. In addition to choking of the optic discs and optic atrophy with its attendant blindness, increased intracranial pressure, especially in children, often gives rise to a paralysis of one or both external rectus muscles of the eye. Such an internal strabismus due to a sixth cranial nerve palsy is of no localizing value in the presence of increased intracranial pressure, but in the absence of such a state it is strongly suggestive of a pontine glioma.

Increased intracranial pressure, particularly when due to a tumor in the cerebellar fossa, may cause herniation of the medulla oblongata and cerebellar tonsils through the foramen magnum. This fact is important for two reasons. This pressure may cause stiffness of the neck which is not, therefore, to be interpreted as indicative of a meningitis; and it makes lumbar puncture in any case with the signs and symptoms of intracranial hypertension a very hazardous procedure. Any neurologist of experience is familiar with cases in which the patient has been killed by a "carefully" performed lumbar puncture, and necropsy has disclosed a benign curable lesion. (Fig. 7.) Such unfortunate and unnecessary deaths are unjustifiable and to be laid at the door of those well meaning but ill-advised individuals who preach the safety of a "carefully" made puncture, forgetting that no doctor ever, in his own opinion, performed one "carelessly."

Generalized epileptiform convulsions are a common early manifestation of cerebral tumor in adults[10] but in children, where cerebellar tumors are far more prevalent, such convulsions due to tumor are less frequently seen, since they occur only as a result of tumors above the tentorium cerebelli. In children they may occur in association with tumors in and about the third ventricle and in such cases are of value in differentiating them from instances of cerebellar tumor. They may also occur with the rarer tumors of the cerebral hemispheres. Jacksonian or localized convulsive seizures due to a cerebral neoplasm are uncommon in children. Although cerebellar tumors do not give rise to epileptiform convulsions, they do at times cause paroxysmal seizures known as cerebellar fits. In these the head is suddenly retracted, all four extremities become rigidly extended and the individual falls over backward. Frequently consciousness is not lost and there are no clonic convulsive movements. Occasionally respiration is disturbed, consciousness may be lost and death may occur. It is important, for differential diagnosis, that these cerebellar fits be distinguished from the tonic and clonic epileptiform convulsions of cerebral origin.

Malignant tumors of the cerebellum

Medulloblastomas (malignant gliomas) and sarcomas (malignant connective-tissue tumors) both arise most commonly in the posterior part of the middle of the cerebellum. (Fig. 3a.) They produce the same clinical picture, have the same prognosis and are treated similarly; but whereas medulloblastomas occur predominantly in boys three to six years of age, the sarcomas, although likewise more common in males, have a wider age distribution and we have encountered several cases in adults.

The onset of the disease in these children is with vomiting, at first in the morning on arising. Headaches, which are usually not a prominent part of the picture, then appear. The child becomes listless and inattentive, and staggers and stumbles as he walks. The head begins to enlarge and he soon outgrows his cap. If the disease is not recognized and treated at this stage a squint and failure of vision will soon appear. Because these are relatively rapidly growing tumors with a life history of less than twelve months from onset to fatal termination if untreated, the progression of these symptoms is rapid and the patients usually consult the neurologist or neurosurgeon within a few weeks after the onset. Examination will reveal choking of the optic discs, enlargement

of the head, and separation of the cranial sutures, but with no distortion of the sella turcica or convolutional atrophy in the roentgenogram. There is commonly some suboccipital tenderness and stiffness of the neck. Little or no true ataxia with the child lying in bed, but definite uncertainty of gait due to disturbance of vestibular function and equilibration, is seen. The child will walk with his feet wide apart to secure greater stability and will tend to fall in various directions. All the extremities are hypotonic. Nystagmus although

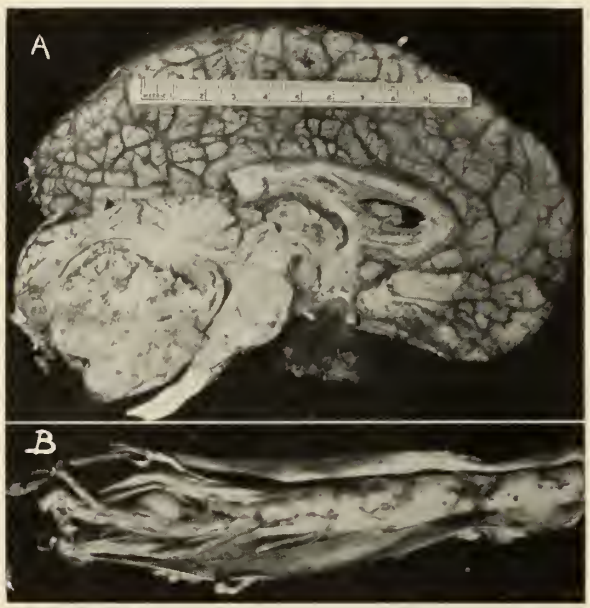


Fig. 3. (a) Malignant tumor (sarcoma) of the posterior midline of the cerebellum. (b) Spread of a medulloblastoma down over the surface of the spinal cord and a nodule amongst the roots of the cauda equina.

often present may be absent and this absence is not significant.

These malignant tumors tend to distribute themselves throughout the cerebrospinal fluid spaces and thus produce metastases over the surface of the entire central nervous system. (Fig. 3b.) In no case of this type has the tumor ever been entirely removed or the patient cured. Our procedure is to make a cerebellar decompression, take a biopsy of the tumor, and give x-ray therapy postoperatively. With this treatment these children usually survive for two to three years, practically never longer than five years. No other form of treatment is more effective. If we were able, before operation, to make a positive diagnosis of the type of tumor present, we would never operate on one of these cases, but unfortunately such diagnostic accuracy is not possible at present.

EPENDYMOMAS OF FOURTH VENTRICLE

These tumors are only about one-third as common as the malignant tumors described above. They tend, however, to produce essentially the same symptoms and it is rarely possible to differentiate between the two prior to operation. Although they are relatively benign neoplasms their origin from the floor and walls of the fourth ventricle and the trauma to the medulla oblongata, which so often is unavoidable during their surgical removal, make for a very high operative mortality rate, and a poor prognosis. They are not favorably influenced by the x-rays.

TUMORS ABOUT THE THIRD VENTRICLE

Tumors in this region constitute approximately 20 per cent of all intracranial tumors in childhood. In our series five per cent were pineal tumors, five per cent craniopharyngiomas or suprasellar cysts and ten per cent gliomas of the hypothalamus and optic chiasm or of the thalamus itself. The figure for the craniopharyngiomas is, however, misleading since approximately an equal number was recognized clinically but not operated upon because of the known poor results of surgical interference. Because they were not verified pathologically they were not included in our series.

Pineal Tumors: All of these tumors in the neighborhood of the third ventricle tend to produce the usual manifestations of intracranial hypertension. In addition the pineal tumors may result in an inability to look upward, an Argyll-Robertson pupil or a pupil unresponsive either to light or accommodation, impairment of hearing and pubertas praecox. In connection with the latter, however, it should be noted that whereas it was formerly believed that premature hypertrophy of the external genitalia with the development of secondary sexual characteristics was diagnostic of disease of the pineal body it is now known that such a condition may appear with other tumors about the third ventricle[3]. Occasionally tumors of the pineal body, particularly the teratomas, will contain areas of calcification which permit a diagnosis from the x-ray photographs. However, since these signs typical of a pineal tumor may all be absent, and since these tumors, as a result of compression of the midbrain may give rise to nystagmus, ataxia and tremor, they are not infrequently misdiagnosed as cerebellar tumors. Diagnosed or misdiagnosed, practically all efforts at treatment have, up to the present, been unsatisfactory. (Dandy[7] and Araki[1])

Craniopharyngiomas or Suprasellar Cysts: These likewise present a knotty and at present unsolved therapeutic problem. These tumors arising from the hypophysis, compressing the hypothala-

mus and midbrain and frequently the optic chiasm, produce a complex group of symptoms. (Fig. 4.) The hypopituitarism which they produce by compression of the hypophysis is characterized by infantilism. The patient fails to grow and develop normally. He is usually smaller and more delicate than would be expected for his age and in addition the skin may become wrinkled giving him the appearance of a little old man. The basal metabolic rate is diminished as much as minus 20 to minus 45, and the genitalia are underdeveloped. If, as sometimes occurs, compression of the hypothalamus results in an obesity rather than the usual hypopituitary slenderness, the patient presents the typical picture of Froehlich's syndrome which, it might be added, is most often the result of a tumor in this location. Other evidences of hypothalamic involvement which may be present in these cases are diabetes insipidus, excessive appetite, hypersomnia, and disturbances of the temperature-regulating mechanism. Compression of the cerebral peduncles and other parts of the mid-

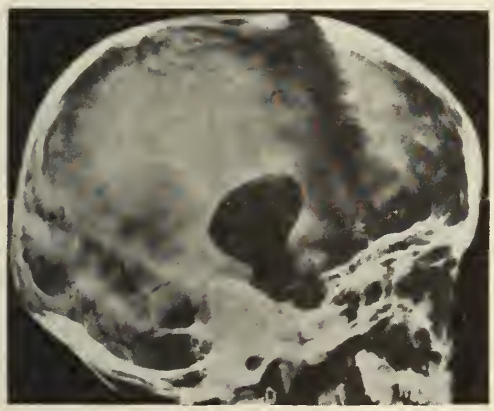


Fig. 4. Craniopharyngioma (suprasellar cyst) which has been filled with air by a needle inserted through the open suture. Calcification is present just above the sella turcica and in front of the cyst.

brain causes an increase in tendon reflexes, Babinski's sign and such evidences of cerebellar dysfunction as nystagmus, ataxia, unsteadiness of gait, tremor, hypotonia and slowness of movement. The optic chiasm may or may not be compressed but the clearcut bitemporal hemianopia characteristic of the compression of the chiasm by pituitary adenomas is seldom seen in these cases. In children, choking of the optic discs and failure of vision are the rule with these tumors, although this is not so commonly the case when these tumors give rise to symptoms in adults. There is one other finding which, though occasionally and misleadingly absent, is of more localizing and diagnostic value than all of these other manifestations together. I refer to the calcification present in these tumors which in a lateral roentgenogram of the skull can be seen in and above the anterior end of the sella turcica.

Gliomas of the Hypothalamus and Optic Chiasm: These tumors are characterized by less marked evidence of increased intracranial pressure than are the pineal tumors and craniopharyngiomas. The symptoms of hypothalamic involvement, hypersomnia, polyuria, polydypsia, polyphagia, adiposity, genital hypoplasia and depression of the basal metabolic rate are the typical manifestations. They are rarely all present together. Invasion of the thalamus, although it often does not give rise to sensory disturbance, frequently produces a severe intention tremor. In our experience such a tremor is rare with cerebellar tumors, unless they are enormous, and should always suggest that the tumor may be above the tentorium. The diagnosis of these tumors is the most difficult and

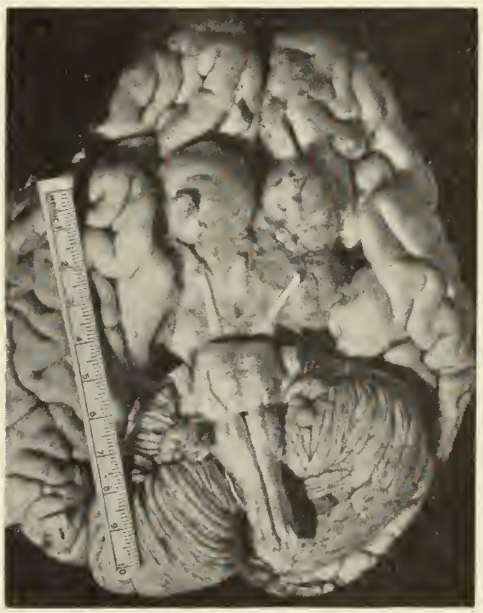


Fig. 5. Glioma of the hypothalamus and optic chiasm. The optic nerves can be seen protruding from the anterior part of the tumor.

it is in these cases that one must most often resort to ventriculography. There is, however, one association of symptoms which is highly significant. Whenever a person with the nodules or pigmented patches in his skin of von Recklinghausen's disease (peripheral neurofibromatosis) develops failing vision he probably has a glioma of the optic chiasm and appropriate roentgenograms will often reveal a dilatation of the optic foramina and an undermining of the anterior clinoids of the sella turcica. These tumors present an impossible therapeutic problem, at least at present, and the prognosis is hopeless.

CEREBELLAR ASTROCYTOMAS

In the preceding pages I have deliberately presented those common intracranial tumors of childhood in which with our present state of ignorance the outlook is almost hopeless. There remains, however, one common tumor of which that is not true; a tumor which is benign and sharply circumscribed; a tumor which can be readily removed and in the hands of a competent neurosurgeon such removal is not accompanied by a high mortality rate (in our clinic, five per cent); a tumor which when removed does not recur and removal of which leaves behind little or no evidence of its previous existence; a tumor in other words that can be completely and permanently cured. Is there no dark side to the story of such tumors? Unfortunately the answer is yes, but the dark side can be completely removed, and its removal rests almost exclusively in the hands of the family doctor. These favorable tumors, astrocytomas of the cerebellum, grow slowly; their symptoms develop insidiously. To the doctor alert to the possibility of their existence, aware of their signs and symptoms which are remarkably constant, and accustomed to the use of the ophthalmoscope, their early recognition presents little difficulty. However, if such is not the case, if he is prone to attribute the early morning vomiting which gradually increases in frequency and severity to so-called "psychic" vomiting or to gastro-intestinal disturbances, and the progressive headaches to refractive errors, eye strain and sinus disease, valuable time may be lost. With the progress of the disease papilledema gives way to optic atrophy and vision fails. Unfortunately sight once lost as a result of secondary optic atrophy is not regained. All of the surgeon's skill will not improve it one iota. All too many victims of cerebellar astrocytomas have been saved only to pass the remainder of an otherwise normal life in a black world. It is solely for the preservation of the sight and life of these children that I discuss this subject with you. The recognition of the other types of tumors is largely of importance as it bears upon the problem of these cerebellar astrocytomas. The differentiation of these other tumors from the astrocytomas often taxes the diagnostic skill of the most expert practitioner, and even he may fail. Therefore, even if the cards are stacked against you, every child suspected of harboring a brain tumor should be treated as though it were benign and removable until it is definitely proved to be otherwise. Delays may be fatal to either life or vision. With no other brain tumor in childhood is the early recognition more important than with the cerebellar astrocytoma.

These tumors are not rare. They constitute one-fourth of all the brain tumors of childhood. They produce intracranial hypertension with its usual attendant train of symptoms, headache, vomiting and choked disc. One should not be misled if the symptoms fluctuate. Once started they may come and go. They may lie quiescent for days, weeks or occasionally months, only to appear again in a more virulent form. They are frequently precipitated by a blow to the head; by an infectious disease, particularly whooping cough. The head becomes enlarged, the veins of the scalp become distended and roentgenograms of the skull reveal typical changes. Because the manifestations of these tumors usually, though not always, progress more slowly than do those of the malignant cerebellar tumors, the changes revealed by the x-rays are more pronounced. The sutures are usually separated, the sella turcica is enlarged, the clinoid processes are eroded, convolutional markings on the inner table of the skull are common and the cerebellar fossa may be enlarged due to bulging and thinning of the suboccipital region. Since these tumors are largely confined to one hemisphere of the cerebellum the signs of cerebellar dysfunction are predominantly unilateral and confined to the extremities on the same side

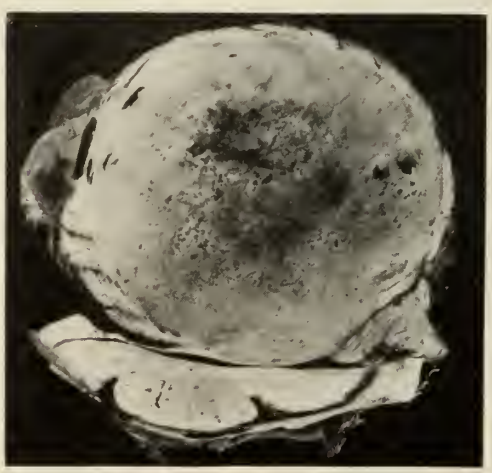


Fig. 6. Solid astrocytoma occupying almost the entire right hemisphere of a fifteen months' old child.

of the body as the tumor. Typically the head is tipped with the occiput toward that side; there is a nystagmus which is coarser and slower toward the side of the tumor; the affected arm and leg are flaccid, they can be thrown about in a floppy manner or even into the patient's face without his being able to prevent it; their movements are slow

and poorly coordinated; writing, buttoning clothes, and other fine movements become difficult; the tendon reflexes on that side are diminished; when the patient walks that arm does not swing; he staggers, usually toward that side, and he cannot walk in a straight line. Although no other tumor is likely to produce this unilateral picture of cerebellar dysfunction in childhood, astrocytomas of the cerebellum do occasionally occupy the midline and reproduce the symptomatology of the malignant tumors.

At operation the astrocytomas may be solid or cystic but in either case they are usually sharply circumscribed and readily enucleated. (Figs. 6 and 7.) In every one of our cases in which the surgeon believed the tumor was completely removed the child is alive and well today, several

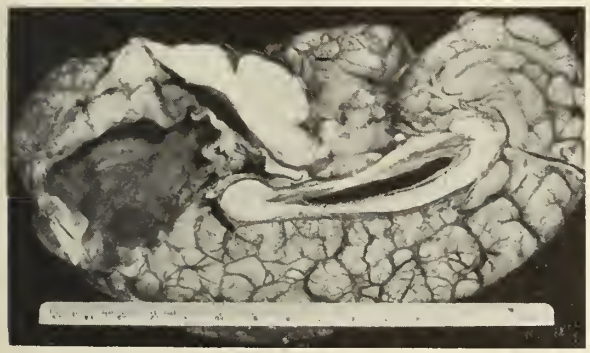


Fig. 7. A large cystic astrocytoma of the cerebellum of an eighteen year old girl whose life was terminated by an unfortunate and ill-advised lumbar puncture. Note the small, round, dark nodule of tumor in the upper part of the cystic cavity.

of them nine or ten years after the operation. (The neurosurgical division of our clinic has only been in existence ten years). Cushing[6] has reported patients alive twenty and thirty years after such a complete removal. If, however, part of the tumor is known to have been left behind, recurrence is the rule although it may be long delayed. Cushing reported one case in which the interval between the first and second operations was thirteen years and I have one boy still well and working every day in whose case an incomplete operation was performed over eight years ago. In the case of the cystic tumors evacuation of the cyst does not suffice; the nodule of tumor which will be found in some part of the wall must be removed.

In the foregoing presentation I have intentionally touched upon some tumors lightly and have ignored many of the rarer ones (hemangioma, meningioma, cerebral glioma, chordoblastoma, etc.) altogether. I have endeavored to present a working basis for consideration of these tumors, to show you that brain tumors in children are not uncommon and are by no means all hopeless, and to point out that further improvement in the results of the neurosurgeon are in a large measure dependent upon your help and cooperation.

SUMMARY

The most common tumors of the brain during childhood are the pontine gliomas (15 to 20 per cent), malignant tumors (medulloblastomas and sarcomas) of the posterior midline of the cerebellum (20 per cent), ependymomas of the fourth ventricle (seven per cent), tumors in and around the third ventricle (20 per cent) and astrocytomas of the cerebellum (20 to 25 per cent). Of these, all but the astrocytomas present a discouraging therapeutic problem and a bad prognosis. The cerebellar astrocytomas are a bright spot. They are benign, can be removed with a low surgical mortality rate and with the almost complete certainty that if removed they will not recur. The chief problem at this time in regard to these tumors lies with the parents and the family doctor. It is important, if these children's lives and vision are to be saved, that the cases be recognized and submitted to competent surgical treatment early.

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SCIENTIFIC TESTS FOR INTOXICATION

FURTHER STUDIES

Harold W. Morgan, M.D., Mason City

In this further report on the use of scientific tests for intoxication, I wish to report experiences with 125 consecutive tests on 114 individuals, all done for legal purposes during the past year. In most instances, the specimen has been urine (86 cases) since this is much easier for police officers to collect. To my knowledge only two accused individuals refused to give urine or blood for the

test. In 39 cases, blood was examined, and in eight cases, both blood and urine were obtained.

Only a few of these people have been seen by me personally; all have had records made in the regular fashion by police officers and many, including all whose blood was examined, were seen by physicians. In no case has the result of the test disagreed with the report of a physician and in only one case with the report of an officer. This case showed no alcohol present and the accused was freed of the charge of driving while intoxicated. In a few other cases the officers questioned a diagnosis of intoxication and the lay witnesses stated their belief that the accused was intoxicated. The opinion of the officers was upheld when low alcohol concentrations were found by test.

The tests so far have shown that officers do not charge an individual with intoxication unless large amounts of alcohol are present. The average amount of alcohol in the urine of the 86 cases was 271.2 milligrams; the average amount of the 39 cases in which blood was examined was 210 milligrams per 100 cubic centimeter of blood. Of interest is the close correlation between the blood and urine alcohol content.

Blood	Urine
110	120
95	120
310	320
155	120
310	310
280	300
195	210
204	220

The above figures show the results of tests where both blood and urine were examined. Notice that in no instance did the difference between the blood and urine alcohol content exceed 25 milligrams. One individual, No. 4, whose blood taken at the time of an accident showed 155 milligrams, had his urine tested the following morning about nine hours after the accident. It was found to contain 120 milligrams at that time, indicating that at the time of the accident he was on the rising portion of the curve, or that he had been drinking just prior to the time the accident occurred, so that an equilibrium had not yet been reached. On one individual I received a blood specimen which contained 95 milligrams; a urine test taken eight hours earlier showed 240 milligrams. This sets the rate of elimination at approximately 20 milligrams per hour, and is in accord with the rate quoted in the literature.

A series of tests was conducted at Dresden, Germany, on a large group of automobile drivers and non-drivers, who volunteered for the experiment.* In the following table are set forth the percentages of persons judged incapable of driving safely after partaking of alcohol, and the corresponding alcohol values of the blood which rendered them unfit.

Alcohol Content of Blood, Per 1,000	Drivers Incapacitated, Per Cent
0.2	20
0.4	40
0.5	49
	(About 2½ small bottles of beer)
0.6	58
0.7	66
0.8	75
0.9	80.5
1.0	87.5
1.1	90
1.2	93
1.3	96
1.4 and over	100
	(About 2 bottles of moderately heavy Rhine wine)

The most important factors involved in the use of the test still remain the precautions for legal acceptance. Legal technicalities which will prevent the admissibility of the test must be carefully avoided. Some responsible person or persons must be able to swear that the specimen is the one taken from the defendant. There must be an unbroken chain of transmission to the person making the test. The container must be kept by the person making the test so that it can be presented in court and identified by the person who originally takes the blood or urine. It is well to have this person sign his name on the carton or container at the time the specimen is received; in addition some adequate record of the receipt and analysis of the specimen should be kept on file. The container must be clean and free from foreign substances. If a physician takes the specimen he must be extremely careful not to create a privileged relationship between himself and the accused. In the Iowa court it has been held that if a physician treats a patient at the time he makes the examination this constitutes a privileged relationship and he cannot testify before the jury to the taking of the specimen for analysis. This creates a hardship in many smaller communities where the accused may be injured and require medical attention. However, it can be obviated in these cases by the use of urine rather than blood which may be secured by some lay individual. The question of privilege needs considerable clarification in our courts and I can certainly agree with Professor Wigmore, Dean Emeritus of the Law School of Northwestern University, who said, "In action for personal injury the permission to claim the privilege is a

*Jour. Am. Med. Assn., cx:1617 (May 7) 1938.

burlesque upon logic and justice." This burlesque is well illustrated by a case in which the test was not admitted because the doctor taking the blood had painted a cut on the finger of the accused person. This person's blood alcohol content had been published in the newspaper and was the common knowledge of the general public, but because of the privileged relationship claimed to exist, this fact which was extremely important in this case, was not given to the jury and the accused was acquitted. In this instance, one individual died as a result of the accident. In three recent manslaughter cases, two of which involved driving while intoxicated, five people were killed and no one received any punishment. Thus the burlesque on justice continues.

Courts in several states have recently ruled on the admissibility of this evidence, and there is now less difficulty in gaining admission of the test in court. A voluntarily given specimen properly identified will usually be admitted, although in a recent case the judge allowed testimony giving the amount of alcohol found (300 milligrams) but refused to permit a statement as to what level constitutes intoxication. The judge would not allow me to state my opinion as to whether or not the man was intoxicated. He ruled that I was not an expert because there was no evidence to show that I had given alcohol to individuals to see when they became intoxicated. One wonders if in a case of strychnine poisoning, it would be necessary for me to state that I had personally given the drug to several people and had observed that a certain dose caused death. Attorneys defending these cases are now seeking other means of nullifying the results of the test. Privilege is one way, and an attempt has recently been made to show that the individual was not intoxicated at the time of the accident or observation, but took large amounts of alcohol between the time of the accident and the time he was apprehended. It is well for any individual concerned in such a case to insist that the test be taken as soon as possible after the individual is apprehended.

There have been eight deaths in our county this year. Two of the persons killed were intoxicated, and a third man was riding with an intoxicated driver. At the September term of the Grand Jury, twenty-nine indictments were returned, twenty-five for driving while intoxicated and one for bootlegging. Of 65 persons indicted for driving while intoxicated sixty-three have been convicted; the test was not used on the two who were freed. So far, in the total of 114 individuals tested, there has been a plea of guilty or conviction in all but two. However, some cases are still pending. Only five cases so far have gone to trial. This has meant a great saving for enforcement officials. My experience leads me to the belief that anyone with over 75 milligrams of alcohol in the blood or 100 milligrams of alcohol in the urine should not be driving a car. I would not care to ride with such a person, and there are many whose ability to drive is markedly impaired by lesser amounts.

The following procedure is suggested as a routine for those taking the test for legal purposes. For urine, the patient should void in the presence of witnesses into a clean container or directly into the bottle. At least ten cubic centimeters of urine are necessary. The bottle should be sealed in the presence of witnesses and given to a responsible person for delivery to the laboratory or for placing in the mail. If the urine will be delayed more than twenty-four hours in reaching the laboratory, a small amount of benzoic acid or sodium fluoride must be added to the specimen before sealing. For blood one should use a syringe and needle sterilized by heat. The skin should be cleansed with bichloride solution or some non-alcoholic material. Sodium fluoride, sodium citrate or oxalate may be used as a preservative and anticoagulant. The solution must be shaken well so that the blood is thoroughly mixed with the preservative. The test tube should be sealed in the presence of witnesses. If the blood is to reach the laboratory within twenty-four hours, no preservative need be added but at least five cubic centimeters of blood are required; otherwise two cubic centimeters will be sufficient. The same precautions for delivery to the laboratory should be followed as are observed with the urine specimens.

LATENT INFECTIONS OF THE MASTOID*

Fred F. Agnew, M.D., Independence

Believing that an acute exacerbation of a latent infection constitutes a large majority of our surgical mastoid problems, I chose to bring the subject before this group for consideration with the hope that some points in the management of the acute suppurating ear with mastoid involvement may be improved, since there seems to be a tendency to allow this acute surgical condition to drift expectantly, and in some instances to trust to radiation to destroy the infection and bring about a cure. An attempt will also be made to show in what manner the invading infection took place and whether at a recent or remote date.

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In the days when some of us older men were students in medicine, little or nothing was taught us about the ear and its diseases. Surgery of the mastoid was in its infancy, an approach to the modern operation coming into use about 1905. While ear clinics were held and an outpatient department maintained, attendance upon neither was required and the majority of students elected to remain away. Neither were there any lectures on the subject, nor were the conditions in which the ear plays such an important part recognized. On the other hand the eye was classed as a major course, with two years of lectures, clinic requirements, special classes and rigid examinations, a striking contrast between that period and the present time.

Due to much intensive study, experimentation and close observation, recent years have brought about refinement in diagnosis, surgical management, and more recently, recognition of invasion of the petrous tip, its diagnosis and a fair result in its surgical management. In retrospect, I now wonder if suppurative labyrinthitis as we have known it, was not in reality petrositis.

Diseases of the ear, as related to those of other body organs and tissues, such as tuberculosis, syphilis of the nervous system and upper respiratory infections, both acute and chronic, are now readily recognized and largely amenable to treatment. These, along with the improvement in the management of chronic ear conditions, and the importance of the labyrinthine function as considered in the examination of air pilots, are a few of the advances of our own time. Ear tests serve as an index to the efficiency of treatment in neurosyphilis, and in the measurement of the degree of function of the ear mechanism we have a guide to the extent, the progress, and the specific involvement of the central nervous system, apart from information gained by the Wassermann test of the blood and spinal fluid. For much of this information we are indebted to Isaac Jones, but we must give due credit to workers in our own group and our own state for much recent knowledge of the ear.

At this time we are directly interested in how and when infection invades the mastoid and in this there seems to be a difference of opinions. Hadjopoulos and Bell[1] believe that the major and more important sources of mastoid infections are the blood stream and lymph channels of adjacent mucosa. With this I am unable to agree and if one makes an exacting effort in obtaining a correct history, he will be convinced that this view is erroneous. The generally accepted route is from the nasopharynx through the eustachian tube to the middle ear, the antrum and the mastoid cells. At least this is the logical, if not the proved route. Friesner and Druss[2] state that "Whatever other means of infection there may be, extension through the eustachian tube is unquestionably the most frequent", and with this opinion most workers will agree.

All contagious and infectious diseases, most of which show more or less nasopharyngeal involvement, are frequently complicated with otitis media, and this constitutes a large number of casualties. The river swimmer and diver, the wind instrument blower, the user of the nasal douche, are habitual blowers and the infected secretions readily pass to the middle ear with the force of the blow. It is my opinion that the eustachian catheter as used by many is a fruitful source of middle ear infection. It has caused trouble for me and I am sure it has for many others. Many times patients present themselves because of pain in the ear when upon examination we find a bulging drum with no inflammatory process present, caused by the vicious method of holding the nose and blowing, a condition relieved only by releasing the confined air, either by simple means or paracentesis. Could this air entering the middle ear be considered sterile? It could not possibly be, and while paracentesis may seem a radical measure in such an instance, it is probably the most conservative. If otitis media is to be prevented, and this means also more or less mastoid involvement, in any or all the above mentioned conditions, these people must be taught how not to blow the nose.

For a number of years it has been the custom in our clinic to examine the ears and throats of all restless babies, and all those having gastro-intestinal symptoms or feeding problems. These babies were checked for a period of about three years and it was found that between 65 and 70 per cent showed a middle ear infection in one or both ears. These babies ranged from a few weeks to three years of age. They were largely bottle fed and in all there was more or less evidence of throat trouble. In these bottle fed babies the sudden release of the nipple of a half filled bottle in which a vacuum has been created will carry air to the middle ear and with it any infection which is harbored in the nasopharynx. In all involved cases paracentesis was done, sometimes repeatedly, until the condition was cleared up.

In a recent article[3] the following statement is to be found: "Of 232 infants examined post mortem, 154 showed an empyaemia of the middle ear, the antrum, or both. Of 76 who had dyspepsia 57 disclosed infection of these cavities". These percentages correspond closely to our own. Some

of our little patients developed mastoiditis and were operated upon. X-rays were taken in all suspected cases. Two of these babies when brought to our office, already had subperiosteal abscesses with advanced necrosis, but the observation of the parents was of the digestive organs, and the ears had received no attention until the swelling behind the ear was noticed. There have been many other similar instances in older children where the complaint had been of headache for some time, but when it became localized with postauricular swelling and severe pain, the need of a physician was felt. The parents do not connect this ear condition with any previous complaint, and many will deny that the child ever before had such pain or a discharging ear. If the pain is mild and of short duration it is probably forgotten, but the infection while inactive is still present, ready to assume intense activity with suitable provocation. When the observing operator enters such a mastoid he knows at once whether the condition is recent or of long standing. The telltale evidence may be in the cortex or within the cellular structure. A walled off cell filled with pus or a hardened area including several cells, or complete necrosis may be found. These evidences are not of short duration and are ample assurance of a latent infection aroused to activity. Nature is kind in her attempts at healing but the scars of the effort are evidence of what has taken place. Sooner or later Nature gives up the battle, the patient comes to you and me, and what are we going to do? Even in this enlightened day it is surprising how often the ears of children suffering from contagion are completely neglected. Later in life they bear mute testimony to the carelessness of the medical attendant, a sad commentary to be laid at the doors of our profession and our institutions of medical teaching.

Every student should be required to make a thorough examination of each case so that he can carry on properly when he takes up the duties of a practice. No routine examination of any child is complete without a close ear examination. A correct history is probably more difficult to obtain in diseases of the ear than in any other disease condition. The ear pain which brings a patient to his physician is not, in his mind, related to one or many of the earaches previously experienced, perhaps one with a discharge for a day or two, apparently so slight as to be forgotten. Was the infection destroyed when the activity subsided in these many earaches or not? I say that it was not. Such may have been the result of a cold, of measles, scarlet fever, influenza, streptococcus sore throat, etc., but admission of such an incident is, at the time, denied. When, however, the macroscopic pathology of the bone is revealed, a corrected history is usually obtainable. Therefore, the history obtained at the time of examination is of small value to the otologist in determining his course.

There is no single symptom, local or general, which considered by itself, will lead the surgeon to a conclusion as to whether or not a mastoid should be explored. His decision must be reached by a careful consideration of all the ear findings. The radiograph will probably confirm (at least it should) what his judgment, based on experience, tells him. By this and this alone will he elect to operate. In all cases coming to surgery, I am ready to make the statement, based on clinical experience, that more than 60 per cent of mastoids operated upon have harbored a latent infection, aroused to activity in a depleted area, well sealed and well incubated, making a vicious attack. Clinically, there is present the pain, its location and character, the distorted fundus, the sagging roof of the canal, persistent temperature, tender tip and antrum, wide pupillary dilatation when pressure on the latter is made, and perhaps, but not always, a discharge from the canal. What more is needed to tell the examiner that this is a surgical mastoid and that waiting only delays the day of the healed surgical wound? The x-ray does help in confirming the involvement and its extent, it outlines the cell distribution, their type, the lateral sinus and its relations, but it is not necessary to tell whether this mastoid is or is not surgical. However, there is no other means which will guide the operator in doing a complete exenteration of the mastoid cells.

How long should we wait? My answer is that one should operate whenever the above named symptoms are present, after drainage is established and the acute pain of an otitis has subsided. Delay only invites those unpleasant complications which prolong convalescence and make the prognosis more guarded. Extensive necrosis, perisinous abscess, lateral sinus thrombosis, brain abscess and probably petrositis, are the unpleasantries to be avoided by prompt and complete surgery, when indicated. One important fact to remember is that discharge may or may not be present even in extensive necrosis of the mastoid cells. We would not applaud the surgical judgment of the man who would delay action in face of an acute appendiceal condition; we would want immediate action. Why then should we slight a condition in the mastoid bone, equally as acute and severe? Having long ago adopted this line of reasoning and carried it out, I find no reason to make a change. The mortality rate has been

low and the complications almost nil in several hundred cases; with this I am quite satisfied.

Recent literature on the use of the x-ray in the treatment of mastoiditis paints an attractive picture but in an analysis of the reports of such treatment and before we allow ourselves completely to be sold, let us recall the old statement that "Eighty per cent of the patients coming to us because of a complaint would have recovered without medical assistance", and in this there is a grain of truth. We have had an elaborate x-ray department in our office for the past twenty-one years and have worked shoulder to shoulder with a trained radiologist over this period of time, trying the rays on various types of infections with disappointing results. At this time I am not at all convinced that the x-ray possesses the efficiency in the treatment of mastoiditis which has been claimed for it by some writers, nor have I ever observed any change in these mastoids after exposure for films, as has been stated. Until its efficiency in treatment becomes an assured fact, I shall continue with surgery which leaves little guessing as to the expected result and the future health and hearing of the patient. Every observer has seen involved mastoids apparently recover, only to flare up at a later date in a vicious manner. Some of the cases reported as having recovered following x-ray treatment, might have recovered to the same extent without it, but they remain a latent menace, injuring the health and hearing and causing most severe, undiagnosed head pains. This is not a new thought but it should be borne in mind by those who would select the x-ray as the treatment of choice.

The surgical procedure is really simple and involves nothing more than a careful attempt completely to remove all of the mastoid cells, necrotic bone, and to establish free drainage from the antrum. This can usually be done, but some cells may escape the most painstaking effort. This has been my endeavor and I was much pleased a few years ago to read a complete description of such an operation written by Albright[4]. In my judgment it is the most outstanding article on the subject that I have read. The type of dressing is not so important, providing good drainage is established and maintained until healing is complete, and providing the surgical work has been properly accomplished. No uncomplicated case should require hospitalization for more than one week.

In conclusion I assert that every case of otitis media is a potential mastoiditis and if purulent drainage persists for a period of two weeks or more, surgical measures should be considered; that more than 65 per cent of mastoids which are operated upon are due to a latent infection, aroused to activity when, by some acute process, a fresh media is substituted for the old; that mastoiditis is as distinctly a surgical problem as is the acute appendix and deserving of like consideration; that the complications of mastoiditis are the result of unpardonable delay or wilful neglect; that if conservation of health and hearing are to be supplied to the public, the obstetrician, the pediatrician and the general practitioner should give more intelligent consideration to the ears of the infant and the growing child.

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INSTITUTIONAL EPIDEMIC MASTOIDITIS*

SIDNEY G. HANDS, M.D., Davenport

"Talk of your science, when all is said,
There's nothing like a bare and shining head.
Age lends the graces that are sure to please,
Folks like their doctors mouldy,—like their cheese."

—Oliver Wendell Holmes in "Rip Van Winkle, M.D."

The announced subject may be somewhat confusing to the critical doctor. Although we have been through a disagreeable experience, we are not able to state definitely upon which end of the cart the horse should be hitched. Could it not be accepted that the mastoiditis was the effect and not the cause of the intestinal disorder? Could this epidemic have been caused by some extrinsic factor as yet unknown? That the type under discussion is essentially institutional is the rule, with the occasional outside case being the exception which proves the rule. Unless the predominating symptoms are recognized and connected with the ear pathology at once, a serious outcome is almost sure to ensue. After one has seen an outbreak among a number of nursing babies, the symptom complex is never forgotten.

The cases mentioned below occurred at the Iowa Soldiers Home, a state institution at Davenport. The babies come almost exclusively from the obstetric department of the University Hos-

*Presented before the Eighty-seventh Annual Session, Iowa State Medical Society, Des Moines, May 11, 12 and 13, 1938.

pital at Iowa City. The older children are sent in as court cases usually because of economic stress in their own homes. The average population of the Home is six hundred and the turnover is about three hundred annually. All normal healthy children are placed in private homes throughout the state, either by contract or adoption, as the opportunity arises. The subnormal children are sent to such state institutions as are equipped to handle the individual's special need.

Therefore, we are discussing a train of symptoms in infants of nursing age, invariably bottle fed. The epidemic started in 1928 when we had eighteen cases. The onset is sudden and stormy and rapidly progressive in severity. The predominating symptom is a violent diarrhea, featured by ten or twelve watery stools in twenty-four hours. Accompanying this is a marked excoriation of the buttocks. The loss of fluid causes a distinct loss of weight with mummification of the tissues in a few hours time. The temperature runs from 99 to 100 degrees. There are no particularly manifest ear symptoms at the outset. The tympanic membrane may show only a dulness of the light reflex. To this may be added a slight pink color.

In almost all cases where a paracentesis was done, a rapid amelioration of the symptoms followed. Almost invariably, fluid, pus or necrotic material was found in the middle ear. The bowel symptoms improved, but not until the mastoid cavity was cleaned out, did the diarrhea cease. Three patients were operated upon and a dry mastoid cavity was found. The membrane of each mastoid antrum was dry, dead white and gangrenous in appearance. There was no modification of the bowel disorder for two or three days, after which a profuse otorrhea occurred with a prompt reduction in the amount and number of watery stools. In a few instances, paracentesis of the drum membrane seemed sufficient. The predominating organism in the ear discharge was a hemolytic streptococcus.

Because this type of mastoiditis has certain peculiar features and because the results seemed to justify the means employed, a few words regarding technic might not be amiss. The primary skin incision is begun about one-half of an inch back and slightly above the level of the upper limit of the external auditory meatus. The incision is continued straight down for not more than one and one-half inches, or barely long enough to receive the blades of the retractor. It is carried through the periosteum with one sweep to the lower limit to prevent mincing of the periosteum. The latter is elevated from the incision anteriorly to the external auditory canal. The periosteum posterior to the incision is elevated only to the extent of one-eighth of an inch or just enough properly to engage the blade of the retractor with the periosteum. As the jaws of the retractor are spread, the fixed position of the posterior blade acts as a fulcrum and the anterior blade is moved forward, pushing all soft structures forward and allowing an unobstructed view of the entire mastoid area. The mastoid antrum is superficial in infants and is always above and behind the external canal. The point of external approach is as close as possible to the posterior superior wall of the canal. A one-eighth of an inch pointed curette is pushed down through the bone with a rotary motion and readily drops into the antrum. The opening is enlarged in all directions until the sides are smooth and no overhanging ledges remain.

The cavity of the antrum is now packed with a strip cut from a Penrose drain. This piece is one-half of an inch wide and ten inches long, the length being regulated by the size of the cavity. One suture is applied and a gap of one-eighth of an inch is left in the skin incision. This readily closes within twenty-four hours and prevents the suture from cutting through the skin. The outer canal is packed with a quarter of an inch selvage strip, which is changed each day since it becomes very foul. No irrigations or insufflations are permitted. The one skin stitch is removed on the third day. The rubber tissue is removed to the extent of one half of an inch each day beginning on the seventh day. Theoretically this rubber drain should be permitted to remain as long as there is any discharge from the outer canal; but it does not work out this way, because the drain itself becomes a source of irritation and causes a certain amount of discharge by its presence. Therefore, the remaining rubber tissue is removed in three weeks, and the external wound is permitted to close. The youngsters soon learn to get their fingers under the dressings and pull out the drains. In one instance, at least, where this was done, a dry ear resulted after eight days; but we do not encourage such haste.

The cases totaled fifty-six, all bilateral, with complete recovery in thirty-three cases, or 59 per cent. Chronic discharging ears remaining after bowel symptoms had disappeared were fourteen in number, or 25 per cent. It must be remembered that many of these children were transferred to other state institutions, while others were placed in private homes. Therefore, it must be assumed that most of these cases cleared up, since this is what happened to most of the wet

ears following mastoidectomy in older children. The total death rate was 14.33 per cent, or eight in number. One death could be charged to the anesthetic, since the exit occurred before any surgery was done. Elimination of this case from the mortality would improve the statistics and lower the mortality rate. Our youngest patient was twenty-three days old and made a complete recovery.

In recapitulation may I say that the symptoms in order of importance were, first, profuse watery stools; second, excoriation of the buttocks; third, mild otitis media; and last, mastoiditis.

Credit for such results as were obtained in this series belongs to my pediatric colleague, Dr. Martin Ott and to Miss Le Fevre, the superintendent of the hospital. Upon these two fell the responsibility and actual physical care of the little patients. My contact was simply the mechanical correction of the head pathology. The tremendous mental strain and manual care which fell upon them can only be estimated by those who have been through a similar siege in caring for a large group of desperately sick infants.

In conclusion, I might add, that there is no bibliography to this essay. The foregoing account is simply a concise record of our individual experience. This fact should increase the value of what is set forth here to those who have occasion to cope with a similar situation.

WHAT DO WE MEAN BY ANTISEPTIC SURGERY?*

H. WINNETT ORR, M.D., Lincoln, Nebraska

When Joseph Lister proposed the antiseptic method, his original idea was to provide a technic for keeping germs out of wounds. All of his early papers and case reports indicate that he employed carbolic acid and a carbolic acid dressing for that purpose and for nothing more. Both Lister and Pasteur emphasized two points with regard to germ infection that have often been neglected or overlooked since that time. They pointed out first, the ability of the patient to defend himself and second, the danger of the introduction of germs by exposure of the wound to the air by meddling with wounds by surgeons or others in changing dressings, or by attempts at wound treatment. Lister pointed out also the danger of tissue damage and delay in wound repair if any chemicals were applied directly to the surface of the wound.

The original Lister idea is described very well by Sir Hector Cameron in 1906 as follows: "In the very first communication he made to the profession of the new method of treatment (Lancet, March 16, 1867), in connection with compound fracture, he dealt with this question of how the atmosphere produces decomposition of organic substances. He wrote: 'We find that a flood of light has been thrown upon this most important subject by the philosophic writings of M. Pasteur, who has demonstrated, by thoroughly convincing evidence, that it is not to its oxygen, or to any of its gaseous constituents that the air owes this property but to minute particles suspended in it, which are the germs of various low forms of life long since revealed by the microscope, and regarded as merely accidental concomitants of putrescense; but now shown by Pasteur to be its essential cause . . .'."

Lister permitted himself, unfortunately I think, to be drawn into the search for an agent which would cure infection; but in that search which is the usual and the mistaken conception of listerism, he and all of his followers have failed up to the present time. The extent and seriousness of this failure did not become apparent until the great war. At that time so famous a surgeon as Dr. W. W. Keen of Philadelphia said that listerism as a method of treating wounds had failed, and that only the scientific brilliance of the Carrel-Dakin method could save the situation. The Carrel-Dakin method, however, was only another method of using a chemical antiseptic applied directly to wounds; to a considerable extent it was a laboratory method with the patient, as a factor, disregarded. The frequent exposures and irritations of the wound surface and the neglect of immobilization in fractures and other compound wounds were so serious that for these reasons as well as because of its technical difficulties, the Carrel-Dakin method has had to be abandoned.

For all these reasons I have returned to the original Lister idea. I employ a simple aseptic technic and dressing for the purpose of protection of the wound surface and the exclusion of infection. Along with our special dressing method we employ the principles advocated by John Hunter, John Hilton, and Hugh Owen Thomas for securing protection and rest by immobilization in correct position of all injured, damaged and infected extremities. If you will remember, in your own practice in the operating room, your aseptic technic is always excellent; but once we leave the operating room and begin to do dressings in the hospital, in the wards or in the patients' homes our rules of asepsis and antisepsis are forgotten, and the patients develop secondary and mixed infections due to the introduction of new organisms by

*Presented before the Upper Des Moines Medical Society, Lake Okoboji, August 4, 1938.

dressings, drainage tubes, instruments or fingers. The dressing instead of being a benefit has been a source of damage and danger to the patient.

I should like to ask you to change your method of dealing with the next patient you have in whom there is wound infection and septicemia. As inflammation, swelling, discharge, temperature and the other signs of wound complications and septicemia develop, instead of continuing with frequent dressings, simply provide wide drainage for the wound. Put on a non-irritating antiseptic dressing and immobilize the inflamed part in a satisfactory splint or plaster of paris cast. You will see a drop in temperature in the course of two or three days instead of the customary rise every day while the dressings are being done.

Lister, himself, was fully aware of the importance of natural repair. He pointed out in his writings that much of the successful surgery done before the advent of antiseptics was due to the ability of the human body to defend itself. Even Lister's immediate followers and nearly all of those since that time have misunderstood his original conception and technic.

Just recently Dr. Robert Morris has written an autobiography entitled, "Fifty Years of Surgery." Dr. Morris was one of the earliest, most enthusiastic, and successful advocates of listerism in America and yet he says in his recent book: "It was some twenty years later that Lister introduced his theory of air infection; and with the backing of Pasteur developed his antiseptic method of wound treatment. Von Bergmann in 1892 went a step further and introduced asepsis. This theory, developed by Schimmelbusch, showed that it was more important to prevent the entrance of microbes into the operative field than it was to destroy them after they had gained entrance. The Von Bergmann principle of holding microbes at a distance quickly succeeded the Listerian idea, though founded upon it".

I have heard Dr. Ridlon say that Dr. Morris was one of the early and one of the best practitioners of the Lister method in New York. The paragraph above, however, indicates that, like many others, he failed to appreciate the fundamental idea of listerism. Dr. Morris was doubtless one of the many who employed antiseptic dressings and irrigations with frequent dressings and disturbances of the wound under the impression that he was following the Lister antiseptic method.

In the Orr method we employ the protective technic advocated by Lister. We handle all of our wounds by means of infrequently changed sterile vaseline dressings and we go even further than most of our predecessors in employing technical methods for the immobilization of inflamed and injured parts and for their protection in correct position. It is important to remember that in reducing a fracture, especially a compound fracture, one must replace in correct anatomic and physiologic position, not only the damaged bones but the nerves, blood vessels, lymph channels, fascial planes and all the anatomic structures which contribute to the return of correct function, circulation, nutrition and nerve supply. Anatomic relationship must be restored and the limb and the patient protected against irritative motion as well as the wound supplied with drainage and protected against the introduction of infection if we wish to provide for defense and repair. Such a patient not only has a better chance for immediate recovery but he is more comfortable as to pain and he is protected against a tendency to contraction and deformity. Better ultimate function is provided for, and there is less likelihood of either deformity or disability. The important item, however, is the conservation of the patient's resources, not only as to life and limb, but of all the parts involved in the accident or the operation. These factors of rest, protection against infection, and an opportunity for self-defense and for repair will contribute to the patient's recovery in the shortest time and to his best eventual result.

CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

Hospital Staff Meeting of December 20, 1938

THE BLOOD BANK

E. D. Plass, M.D., Iowa City

Department of Obstetrics and Gynecology

A blood bank is a supply of preserved whole blood which is drawn upon for transfusions and is replenished whenever the opportunity offers. Its chief values lie in the ready availability of blood for emergency transfusions and in the fact that blood from any relative or friend may be used to repay the bank, irrespective of blood groups involved. In large charity hospitals, the operation of such a bank should considerably reduce the expenditures for blood. At the University Hospi-

tals, where relatives with the proper blood group are rarely available and where it is frequently necessary to utilize professional donors, the purchase of blood is a considerable item in operating costs.

My interest in the preservation of blood and in the blood bank was aroused about eighteen months ago by a report from J. R. Goodall of Montreal, on the preservation and subsequent transfusion of fetal blood, obtained from the placental end of the severed umbilical cord. The blood (from 100 to 125 cubic centimeters in each case, provided the cord was severed promptly after birth) was collected in a flask containing an equal amount of an anticoagulant solution containing:

Sodium chloride	7.0
Sodium citrate	5.0
Potassium chloride	0.2
Magnesium sulphate	0.004
Distilled water	1000.0

A few drops of the blood were collected in saline solution for grouping and about two cubic centimeters were run into a Wassermann tube for serologic tests. The blood-anticoagulant mixture was preserved in a refrigerator at 33 to 38 degrees F. for as long as several weeks before use. Slight hemolysis occurred in practically every specimen but was explained on the basis of the disintegration of the nucleated red cells, which are presumably less stable than the nucleated variety. Even when there was considerable hemolysis as evidenced by discoloration of the supernatant plasma, transfusion was not followed by a temperature elevation of as much as one degree, or by any other untoward reaction. Blood was not collected when the child was premature or when the mother had an infectious disease or serologic evidence of syphilis.

Mathematically, this procedure presented a possible saving of considerable magnitude. With an average of 140 deliveries per month and assuming that 100 cubic centimeters of blood could be collected from each of 100 suitable cases, the monthly collection would be 10,000 cubic centimeters, worth $500 at the present price. Moreover, the red cell and hemoglobin concentrations of fetal blood are so high that its value, especially in anemic patients, should be greater than that of normal adult blood. Preliminary tests indicated that the problem was not so simple as it seemed, and the present intensive study of the preservation of blood was begun.

A survey of the literature indicates that blood preservation was first attempted by Rous and Turner of the Rockefeller Institute, although interest in the general subject had been aroused by Abel's work on plasmapheresis. Rous and Turner, who were concerned chiefly with preserving blood cells, finally adopted an anticoagulant medium containing isotonic sodium citrate solution and isotonic dextrose solution, two parts of the former and five parts of the latter being added to three parts of blood. In such a mixture the blood cells remained intact for as long as four weeks. For experimental transfusions, the supernatant plasma mixture was discarded and the cells taken up in salt solution for injection into the recipient animal. The concentration of sodium citrate in the whole blood mixture was considered too high for safe administration in view of previous experimental studies.

During the World War, Robertson, of the United States Army, employed the Rous-Turner technic in twenty cases. The blood was stored for as long as twenty-four days (average ten to fourteen days) and the cells equivalent to 500 cubic centimeters of whole blood were given intravenously after suspension in salt solution. Nine of the patients died (45 per cent), but the author was of the opinion that the eleven survivors owed their lives to the procedure. A few other similar reports appeared at this time.

After the War this type of investigation ceased for several years and then was revived by the Russians, who during the past decade have contributed greatly to our knowledge of blood preservation. Most of this work has utilized cadaver blood obtained from healthy individuals who have died suddenly from drowning, hanging, electrocution, coronary occlusion, et cetera. The blood is drawn under aseptic conditions within six hours of death and is preserved in the cold. When a healthy individual dies suddenly from accidental causes, the blood clots shortly after removal from the body, but then reliquifies (undergoes fibrolysis) and will not clot again. This phenomenon does not occur after the slower death due to disease, and various solutions have been employed to prevent coagulation. Judin, of the Central Emergency Hospital of Moscow, reports that, over a two years' period, two tons of preserved cadaver blood has been given and that ten liters or more are constantly available for use. No toxic manifestations due to the preserved blood have been recorded in 1,000 cadaver blood transfusions although there have been seven fatalities in the

series (air embolism and infection at the site of venipuncture, one each; incompatible blood, two; and hemolysis, three).

On both sides in the Spanish Civil War, preserved blood has been used in the treatment of the more severely shocked and wounded. The donors are civilians who volunteer for the service and who are reimbursed by extra food rations. The Madrid Blood Transfusion Institute reports the use of 400 liters of preserved blood each month and as many as 100 transfusions in a single day. Preservation is limited to Moss groups II and IV (International groups A and O), and donors in these groups supply as much as 500 cubic centimeters every three weeks. Fifty cubic centimeters of 3.8 per cent sodium citrate solution are employed for preventing coagulation in 500 cubic centimeters of blood, and the mixture is stored at one degree C, for as long as three weeks. Badly hemolysed bloods are discarded and no transfusions of more than 1,000 cubic centimeters are given because larger quantities involve the administration of an amount of citrate that might induce fatal toxic reactions.

Blood banks are in operation in several large hospitals in this country. The first one was started at the Cook County Hospital in 1937, and during the first year of operation, 962 transfusions of preserved blood were given, using blood from one to twenty-two days old. There were 130 reactions, 13.5 per cent, of which none was severe. With blood less than twelve days old, the reaction incidence was from eight to sixteen per cent, while with older blood the rate varied from thirty-three to fifty per cent. The anticoagulant preservative medium is a sodium citrate—sodium chloride solution. Other well-established "banks" are maintained at the Philadelphia General Hospital and the Los Angeles County Hospital.

In this institution, attention has thus far been directed toward investigating certain problems connected with the preservation of blood, although a few transfusions of preserved blood have been given successfully. These procedures are carried out by a special transfusion team and extensive records are being made to facilitate the clinical study.

Now that we know blood can be preserved for considerable periods under suitable conditions, the way is open for a development of this service in civilian hospitals, and its military possibilities would seem considerable. Future studies may be expected to improve the technic by developing better anticoagulant media and improved means of storage, and thus to reduce still further the unpleasant reactions.

TECHNICAL PROBLEMS INVOLVED IN THE PRESERVATION OF BLOOD

Elmer L. DeGowin, M.D., Iowa City

Department of Internal Medicine

Review of the literature on the preservation of blood reveals a lack of exact data on the action of various preservatives, the relative merits of each, and on the mode of disintegration of blood plasma and cells. Therefore, extensive studies have been undertaken in our laboratories to throw further light on these problems.

The preservatives so far studied are solutions of sodium citrate alone, glucose plus sodium citrate, glucose plus heparin, and sodium citrate plus sodium chloride. Fresh human blood was added to isotonic solutions of the above substances and the mixtures stored at temperatures of two to five degrees C, for thirty-five days. At five-day intervals determinations were made of plasma hemoglobin, plasma potassium, hydrogen ion concentration of plasma, plasma glucose, fragility of erythrocytes, ability of erythrocytes to respire, and prothrombin content of plasma.

The early observation of Rous and Turner was confirmed that, in mixtures having a large content of glucose, hemolysis proceeded much more slowly than in those with little or none. With ten days' storage the bloods containing little glucose were much more extensively hemolyzed than were those with a high concentration of glucose at the end of thirty-five days. The potassium of the red blood cells diffused into the plasma rapidly during the first ten days, after which time an equilibrium was attained. The diffusion of potassium was independent of the rate of hemolysis, the glucose content of the plasma, or the presence of sodium citrate.

The blood mixtures were all adequately buffered as the hydrogen ion concentration of the plasmas gradually changed from 8.00 to 7.00 in thirty-five days. Glycolysis proceeded for fifteen or twenty days even at the low temperature of storage. The red blood cells retained their ability to respire over long periods of storage and their fragility was not appreciably changed. Preliminary studies indicated that the prothrombin content of the plasma was not seriously impaired at the end of fifteen days' refrigeration.

From the above data it would appear that the best preservative studied consists of a mixture of ten parts of blood, thirteen parts of 5.4 per cent glucose, and two parts of 3.2 per cent sodium citrate (U.S.P.XI.). This mixture has been used successfully for a few transfusions. The oldest blood used so far was seventeen days old.

THE PREPARATION OF DESICCATED SERUM

H. P. SMITH, M.D., Iowa City

Department of Pathology

Many colloids, including serum, can be preserved more or less indefinitely in the dried state. If the drying is carried out at room temperature or at higher temperatures, the materials are denatured. They lose their biologic properties, and in certain cases they are actually rendered insoluble.

The denaturalization can be avoided, however, by drying the material in the frozen state. This technic has been used for many years by laboratory workers, but on a small scale. Recently the technic has been developed on a large scale basis through work done at the University of Pennsylvania.* The necessary apparatus, in several sizes, has been placed on the market.

The material to be dried is placed in a number of flasks and connected by tubes to a large desiccator filled with anhydrous calcium sulphate, as shown in the accompanying illustration. The entire system, including the desiccator, is evacuated with a motor-driven pump. The water molecules distill over from the serum into the desiccator where they unite with the calcium sulphate. In ordinary distillations the air forms an obstruction to the passage of the water molecules, but in this apparatus the air molecules have been removed by the vacuum pump. The water distills over with extreme rapidity, and as a result the serum becomes cooler and cooler, and finally freezes. From this point on, water distills over from the frozen serum as long as any water remains in the latter. The end result is a dry powder which has been altered very little as a result of the technic. With this apparatus one can dry as much as 1,500 cubic centimeters of serum in twenty-four hours at an estimated cost of somewhat less than one dollar.

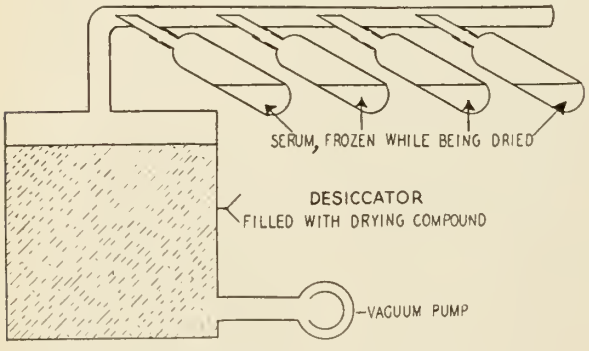


Diagram of Apparatus for Preparing "Lyophile" Serum.

*Flosdorf, Earl W., and Mudd, Stuart: Improved procedure and apparatus for preservation of sera, micro-organisms and other substances—cryochemo-process. Jour. Immunol., xxxiv:469-490 (June) 1938.

THE USE OF LYOPHILE SERUM

P. C. JEANS, M.D., Iowa City

Department of Pediatrics

Lyophile serum, after being dissolved, presumably may be used in the same manner and for the same purposes as serum in its original fluid state. What appear to me as a pediatrician to be the fields of greatest usefulness are in the treatment of nephrosis and in the prevention of certain communicable diseases.

Apparently serum may be dried by the lyophile process without loss of immune bodies. When dried, the product is much more easily preserved than when it is in a fluid state. Thus convalescent serum may be collected at the time of greatest suitability and convenience and preserved for a more or less indefinite time until needed. The advantages of lyophiled convalescent serum are sufficiently obvious that further discussion seems unnecessary.

One of the characteristics of nephrosis is low blood protein. Some degree of relationship exists between the level of blood protein and the amount of edema. One of the objectives of treatment may well be the raising of blood protein above what may be termed the critical level for edema. It is recognized that repeated transfusions are only moderately effective in increasing blood protein and maintaining it at a higher level. When transfusions of whole blood are used, it is usual to find that, because of continued protein loss, the red cells increase relatively more rapidly than the protein. Ultimately under such a regimen the time arrives when it is advisable to use transfusions of serum instead of whole blood. Even with relatively large amounts of normal serum the results are often somewhat disappointing. It was this situation presumably that led to the use of concentrated lyophile serum. In July, 1938, Dr. Aldrich and his coworkers reported in the *Journal of the American Medical Association* the results of administration of lyophile serum to nine children with nephrosis. Six of these had excellent responses with complete loss of edema, the improvement continuing to apparent cure in at least four. In three the effect on the edema was absent or negligible.

Of our own patients three with nephrosis were treated recently with lyophile serum after a protracted regimen of transfusions of whole blood

and serum. One child had a spectacular response, one a good response, while one apparently showed no effect. The child who had an excellent response had received a total of 1,350 cubic centimeters of blood and 2,500 cubic centimeters of serum during the preceding two months. Nearly ten liters of fluid had been removed from the peritoneal cavity. During this period the amount of edema varied, but the boy had a net gain in weight of seven pounds. After the intravenous administration of 100 cubic centimeters of lyophile serum, given in four times normal concentration, he rapidly lost twenty-three pounds in weight and became edema free.

The child recorded as having a good response had received a total of 600 cubic centimeters of blood and 4,320 cubic centimeters of serum during the preceding six weeks. With this regimen he lost edema to the extent of nine pounds, but some edema remained. He was given 125 cubic centimeters of lyophile serum of four times normal concentration. Little effect on the edema was noted. However, this boy, as well as the first patient, excreted decreased amounts of albumin in the urine. At the present time the protein of the urine of both boys is approximately one-tenth of its former quantity. The blood protein of neither boy has yet returned to normal after the lapse of approximately three weeks from the administration of lyophile serum.

Little doubt exists that lyophile serum has highly beneficial effects for some patients with nephrosis. The reasons for the good results are not clear. The amount of protein administered in the lyophile serum is no greater than the amount these patients had received in normal serum; nor is the amount of protein received sufficient to increase the blood protein above or even as high as the supposed critical level for edema loss.

Discussion

Dr. Hale: The relation of the lyophile machine to bacteriology was not particularly mentioned, but it is very useful in preserving cultures, particularly the more delicate organisms such as the gonococcus, meningococcus, and pneumococcus. As you all know, it is a chore to maintain a large number of strains of such organisms in culture media, since they must be transferred rather frequently. By use of this machine they may be dried and preserved indefinitely. It has even greater use in maintaining viruses. Usually viruses must be maintained either in tissue cultures or in susceptible animals, but with this machine a great many viruses may be dried and stored for several years.

Dr. Alcock: Mr. Neff, would you tell us something of the economic side of organizing a blood bank?

Mr. Neff: Of course this side is one of the important considerations we have in mind in instituting a blood bank. Hospitals using the blood bank, as Dr. Plass mentioned, instituted it primarily for the economic benefits which were obtained. We are eager to get this important project in effect as soon as we practically can, but we realize it must go through the period of experimentation, which Drs. DeGowin, Plass and others have been doing for us, in order to have a secure basis for the use of stored blood.

Dr. Gibson: Some years ago we conceived the idea of collecting human urine from a case of nephrosis and isolating the protein, but never went any further because we did not have the nerve to re-inject it into the blood stream. There is no reason why ascitic fluid proteins should not be separated and dried by the lyophile process and subsequently injected in conditions where blood protein levels are too low. Regarding Dr. Jeans' intimation that the lyophile serum is more effective than ordinary serum for blood transfusions, there may be some colloidal change in the serum as the result of the freezing which would make the protein more hydrophilic.

Dr. Ames: Has any attempt been made to preserve blood by dehydration?

Dr. DeGowin: Unfortunately, dehydration of the blood cells results in rupture of the cell membranes and release of the hemoglobin.

Dr. Daum: Why couldn't you use a very quick freezing process to preserve blood?

Dr. DeGowin: Dr. H. P. Smith tried it without success, but it might work if you could get a layer of cellulose around the cells as is true in plant cells.

Dr. Alcock: This is just another angle of freezing foods.

Dr. H. P. Smith: I would like to say that it is our hope to install the equipment for drying serum and other colloids in connection with our newly-established blood bank. The blood bank would furnish a ready supply of serum at minimum cost, and the personnel, equipment and supplies could be used in common.

Dr. Plass: May I suggest that Dr. DeGowin tell us how many transfusions have been given to date from our blood bank?

Dr. DeGowin: We have very little pertinent data at the present time, but have given about thirty-five transfusions with blood mixed with the preservative from which we get the maximum results, namely a large amount of glucose combined with enough citrate to keep the blood from coagulating. We have given about ten or twelve transfusions with blood from two to twenty-three days of age. In none of the recipients has there been any serious or violent reaction, but two patients developed hemoglobinuria. One of the problems is to ascertain how much free hemoglobin the human organism can tolerate without developing hemoglobinuria, because there is a definite kidney threshold for hemoglobin. Whipple has determined the renal threshold for hemoglobin in the dog. In the work Dr. E. D. Warner, Dr. Lloyd Randall and I did with dogs, it was found that the kidney tubules

can be very definitely blocked with hemoglobin when the urine is acid, but not when the urine is alkaline. However, with all the human recipients, the urine has been carefully alkalinized by sodium bicarbonate, and no definite reactions were observed. Not all of the blood given was hemolyzed as far as we can tell.

THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

HEMORRHAGE FROM A FALLOPIAN TUBE

D. F. WARD, M.D., Dubuque

The following case report of intra-abdominal bleeding from a fallopian tube is reported because of the difficulty of arriving at a definite diagnosis.

CASE REPORT

The patient was a white female, thirty-one years of age, who was admitted to The Finley Hospital, November 9, 1938, with a diagnosis of ruptured left tubal pregnancy. The chief complaint upon admission was diffuse lower abdominal pain and extreme weakness.

Family History: The mother and father were dead; one brother and one sister were living and well. There was no history of diabetes, cancer, tuberculosis or epilepsy.

Past Medical History: The patient had had the ordinary diseases of childhood, but no specific fevers or accidents. The past surgical history revealed the fact that a subacute appendix had been removed in 1934 with no complications. The obstetric history revealed four normal pregnancies; the oldest child was twelve years of age, and youngest were twins, born in 1932, making a six-year period of sterility.

Present Illness: The patient stated that her menstrual periods had always been regular. Catamenia began at the age of fourteen, and with the exception of pregnancies, had been normal in regularity and length of flow, causing no abnormal symptoms. In August of 1938 the periods became irregular. In addition to her regular period during the first week in August, she flowed for three days beginning fifteen days after her normal period. No apparent distress or concomitant symptoms accompanied this extra period. During the first week in October, she again had menstrual manifestations similar to those experienced in August, with the appearance of the menses in the middle of October. She had some "bloating" and enlargement and tenderness of the breasts, which subsided with the cessation of flow three days later. On November 5, 1938, the patient began having abdominal pains which were colicky-like in nature and which radiated to the rectum. At this time she began to show a bloody vaginal discharge of very slight amount which continued for three days. Two days later slight vaginal bleeding appeared, and the pain which was confined to the lower abdomen became steady in nature. A diagnosis was made of ruptured left tubal pregnancy, and the patient was admitted to the hospital for treatment.

Physical Examination: No abnormalities were present except those related to the present illness. The general appearance was that of a well developed, well nourished white female of the stated age, somewhat pale and restless, in acute pain. The eyes, ears and nose were normal; the mouth contained many carious teeth. The neck was negative for enlarged glands, goiter and stiffness. The thorax was symmetrical, but the costal flare was limited because of rapid shallow breathing. The lungs were negative to auscultation and percussion; breath sounds were bronchovesicular. The heart was not enlarged; no murmurs or thrills were present; the rate was regular, but rapid. The lower abdomen was somewhat distended and doughy to touch. There was no rigidity. Tenderness was evident, especially on the left side. There was dulness in the flanks. The abdominal veins were not prominent, and there was no discoloration about the umbilicus. A vaginal examination showed the external genitals to be normal, although there was a slight bloody vaginal discharge. The pelvic floor was relaxed, and the cervix was lacerated, downward and forward. Manipulation of the cervix was painful, and further examination became inadvisable because of the pain. However, there seemed to be fluctuation in the cul-de-sac.

Laboratory Findings: A laboratory examination of the blood revealed the following facts; white blood cells, 10,000; red blood cells, 2,100,000; hemoglobin, 36 per cent (Sahli). The urine examination showed the presence of albumin, but tested negative for sugar and acetone; the specific gravity was 1.011.

Operative Notes: An old median incision scar was removed, and upon reaching the peritoneum the bluish color of intra-abdominal bleeding was noted. Considerable new and old blood with many clots was removed from the peritoneum. The uterus was normal in size and in the anterior position. The left tube was elevated and three times its normal size; the fimbriated end was partially adherent to the epiploic appendages of the sigmoid colon. There was a cyst about the size of a lemon

in the broad ligament attached to the tube. It contained clear fluid, and in the resection of the tube, the cyst ruptured. Dissection of the tube and cyst was performed, and both were removed. The right tube and ovary were normal in appearance. All bleeding was controlled, many more blood clots were removed from the cul-de-sac, a Penrose drain was inserted and the abdomen closed in layers. The patient was given an intravenous injection of five per cent glucose in 1,000 cubic centimeters of normal saline solution.

Pathologic Report: "Grossly the specimen consists of a fallopian tube and a collapsed cyst which is attached to it. There are also two small parovarian cysts present. The large cyst is lined by a smooth membrane. The fimbriated end is dark red and covered by blood. On opening, a little blood clot is found on the mucosa, but the latter is smooth and pale pink. The wall is slightly thickened. Microscopically the sections show fibrosis and round cell infiltration of the wall, as well as some granulated tissue. Hemorrhage appears over the serosa and in the lumen, but there is no evidence of pregnancy. The wall of the cyst is connective tissue and it is lined by a flattened layer of epithelium."

Anatomic Diagnosis: Chronic and subacute salpingitis with hemorrhage; broad ligament cyst.

Progress in the Hospital: The patient was given a transfusion of 500 cubic centimeters of whole blood on the day following operation, and the effect was sufficient to make further transfusions unnecessary. The drain was shortened daily, and the drainage was not marked to any appreciable amount. The patient was lifted to the wheel chair on the sixth day, the sutures were removed on the ninth day, and the patient was discharged, as cured, eleven days after admission.

COMMENT

A review of the case brings one to the conclusion that it was an instance of ruptured tubal pregnancy, although the report of the pathologist suggests hemorrhage from the fallopian tube. A definite diagnosis is difficult in view of the fact that these sources of information differed so greatly; it is hard to believe that, in the absence of an embryo or chorionic villi, we have a case of ruptured tubal pregnancy. However, in a personal communication from Dr. F. H. Falls of the University of Illinois, concerning this case, we find mentioned the possibility of implantation of the fertilized ovum on a vessel of the tube, with early rupture. Walschied states in his text that it is prima facie evidence of ectopic pregnancy, whether or not the embryo is found. An extensive review of the literature brings to light only eleven cases of hematosalpinx with hemorrhage. The first consideration in this case was to meet the emergency rather than to take time for a curettement and an Ascheim-Zondek test. Fortunately the treatment applied was indicated in either diagnosis, and the patient is living and well.

ANNUAL SPRING CLINIC OF THE ST. JOSEPH CLINICAL SOCIETY

The St. Joseph Clinical Society will hold its eighth annual spring clinic on March 28 and 29, at the Hotel Robideaux, St. Joseph, Missouri. There will be no registration fee. The purpose of the meeting is to offer a concentrated postgraduate course in recent advances in clinical medicine and surgery as interpreted by eminent clinicians who will be our guest speakers. This year's speakers offer an especially attractive series of clinical lectures. Aware of the ever increasing importance of more recent social trends as they affect organized medicine, we have secured Dr. Morris Fishbein who will deliver an address to which the general public will be invited. Two luncheons and banquets will be reserved for relaxation and entertainment. The St. Joseph Clinical Society extends a cordial invitation to all members of the medical profession who may wish to be guests at this clinical gathering.

Transurethral Prostatic Resection
Dr. Gershom J. Thompson

Cancer of the Uterus Dr. Q. W. Newell

Treatment of Septic Abortion Dr. Fred J. Taussig

The Coordination of Radium with Surgery in the Treatment of Cervix Cancer Dr. F. J. Taussig

Some Aspects of Surgery of the Hip Joint
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STATE DEPARTMENT OF HEALTH

Nate L. Bierring

Pneumonia News Notes

Incidence of Pneumonia Types in Iowa.

During 1938, pneumonia case records numbering 285, were completed and returned to the State Department of Health through cooperation of attending physicians and hospital workers associated with typing stations. Sixty-six or 23 per cent of the total reports specify that the type of pneumonia was undetermined. The frequency of occurrence of various types of pneumonia in the remaining series of 219 reports is shown in the following table:

TABLE I
Frequency of Occurrence of Types of Pneumonia in 219 Case Records Assembled in Iowa in 1938

Type of Pneumonia	Number of Cases	Per cent
1	81	36.9
2	53	24.2
3	17	7.8
4	9	4.0
5	14	6.4
6	11	5.0
7	22	10.0
8	3	1.4
10	1	0.5
14	2	0.9
19	1	0.5
21	1	0.5
28	1	0.5
Double Infection		
2 and 7	1	0.5
1 and 2	2	0.9
TOTALS	219	100.0

Report cards and monthly report forms have been distributed from the department to all stations where pneumonia typing is done. These forms will ensure more complete reporting of cases and continue to provide valuable information relative to the frequency of occurrence of various types of pneumonia in Iowa.

Serum Treatment in Type I Pneumonia.

Analysis of 344 pneumonia case records assembled in Iowa in 1938 and during January of 1939, shows that of 85 patients who suffered with Type I pneumonia and received type specific antipneumococcic serum, nine deaths occurred, a mortality rate of 10.6 per cent. In the same series, the case fatality rate among 77 patients to whom serum was administered within four days after onset of symptoms, was 9.1 per cent. The figures appear in Table II as follows:

TABLE II
Serum Treatment and Type I Pneumonia Mortality in Iowa Based on 85 Case Records Received During 1938 From Attending Physicians and Hospitals

	Serum given within four days after onset			Serum given fifth day or later after onset			Total		
	Number		Per cent Mortality	Number		Per cent Mortality	Number		Per cent Mortality
	Cases	Deaths		Cases	Deaths		Cases	Deaths	
All Ages	77	7	9.1	8	2	25.0	85	9	10.6

Bullowa[1] reports a mortality percentage of 38.8 in a series of 67 non-serum treated cases. An adequate comparison of the case fatality rate in serum and non-serum treated cases in Iowa, will be possible with the assembling of a greater number of records, including cases treated without serum as well as those in which serum was used.

Serum Treatment in Type II Pneumonia.

The 344 pneumonia records collected in Iowa during 1938 and thus far in 1939, specify 47 patients as having received serum for Type II pneumonia, the mortality rate being 19.1 per cent. Of 44 patients to whom serum was administered within four days from onset of illness, six died, making a mortality rate per 100 cases, of 13.6 per cent. Table III presents the figures:

TABLE III
Serum Treatment and Type II Pneumonia Mortality in Iowa Based on 47 Case Records Received During 1938 From Attending Physicians and Hospitals

	Serum given within four days after onset			Serum given fifth day or later after onset			Total		
	Number		Per cent Mortality	Number		Per cent Mortality	Number		Per cent Mortality
	Cases	Deaths		Cases	Deaths		Cases	Deaths	
All Ages	44	6	13.6	3	3	100.0	47	9	19.1

According to Bullowa[2], the mortality in a series of 111 non-serum treated cases of Type II pneumonia, was 44, a fatality rate of 39.7 per cent. The apparent lowering of the mortality rate in Iowa through the use of type specific serum will be more significant when comparison can be made

between a larger series of non-serum and serum treated cases in this state.

ANTIPNEUMOCOCCIC SERUM AVAILABLE

The Iowa State Department of Health supplies antipneumococcic serum without cost, for the underprivileged patient whose type of pneumonia has been carefully determined by the Neufeld method. Whenever possible, the Department cooperates in supplying the serum, with a pharmacist-distributor in the locality from which the pneumonia case is reported.

If antipneumococcic serum is not obtainable in his community, the attending physician may secure the same by reporting the case by telephone, to the Iowa State Department of Health, Des Moines. The telephone number from 8:00 A. M. to 5:00 P. M. is 4-9111, Extension 137. After 5 P. M. on week days, Saturday afternoons or Sundays, request for serum will be answered through Des Moines telephone numbers 7-1417 or 5-2621.

Therapeutic antipneumococcic serum is available for the following twenty types of pneumonia: I, II, III, IV, V, VI, VII, VIII, IX, XI, XII, XIII, XIV, XVII, XVIII, XIX, XX, XXIII, XXVIII, XXIX.

CONTROL OF TYPE I PNEUMONIA EPIDEMIC

An interesting study of Type I pneumonia in which a severe epidemic was brought under control following immunization with pneumococcus antigen, has been reported by Smillie, Warnock and White.[3] During the early part of 1937, an epidemic of 110 cases of pneumonia occurred in the State Hospital at Worcester, Massachusetts. The population of the institution comprises the Main Hospital, with about 1,800 patients and 500 employees, and the Sumner Street Division with 600 patients and 100 employees. An epidemic of influenza developed in the Main Hospital in January, 1937, and continued for six weeks. Undue prevalence of pneumonia was noted during the influenza outbreak and pneumonia continued in epidemic form after the subsidence of influenza. The pneumonia cases affected patients and employees and were distributed in many parts of the Main Hospital. Nearly all of the cases were found to be due to Type I pneumococcus. This type of pneumonia was not unduly prevalent at the time, in the city of Worcester nor in the state as a whole. It seemed evident that carriers were playing a large part in the spread of pneumonia and a survey revealed that ten per cent of all the patients in the Main Hospital were harboring Type I pneumococcus in the nasopharynx. In contrast, Type I pneumococcus was found in only one or two out of 500 persons in a normal population group. It was impossible to isolate all of the pneumococcus carriers, since these were estimated to number 200.

As new cases of Type I pneumonia were developing every day, resort was made to the use of an antigen containing polysaccharide prepared from Type I pneumococcus. A single dose of 0.5 of a cubic centimeter containing 2 milligrams was administered to more than 1,900 patients and employees in the Main Hospital from March second to fourth, 1937. The following paragraph is quoted from the article by Smillie and his associates:

"The epidemic of pneumonia in the Main Hospital stopped almost immediately following the administration of the antigen. We cannot affirm, of course, that the antigen stopped the outbreak. It is possible that the epidemic might have stopped spontaneously on March 4. The results would have been much more clear-cut if it had been feasible for us to immunize every alternate person, but this was not possible. The hospital authorities felt that if we had any reason to believe that the antigen would give some protection, then we were unjustified in withholding this possible protection from a single patient. A small number, about 200, of the patients and a few attendants refused the antigen, and this group served, in some degree, as a control series."

Among four patients who developed Type I pneumonia following use of the pneumococcus antigen (Felton), three had not received the immunizing treatment.

Six cases of Type I lobar pneumonia developed in the Sumner Street Division following control of the pneumonia epidemic in the Main Hospital. "The outbreak of pneumonia at Sumner Street Division ceased, following the administration of the antigen, just as it had done at the Main Hospital."

Summary.

The report by Smillie and his associates is of special interest in that the article deals with an outbreak of lobar pneumonia due to a particular type of pneumococcus, discusses the important rôle of pneumococcus carriers and suggests the possibility of the control of pneumonia through the use of type specific antigen.

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2. Ibid: p. 370.
3. Smillie, W. G., Warnock, G. H., and White, Harold J.: A study of Type I pneumococcus epidemic at the State Hospital at Worcester, Massachusetts. Jour. Pub. Health, xxviii:293-302, (March) 1938.

ANTHRAX BACILLI ISOLATED FROM SHAVING BRUSHES IN IOWA

Anthrax in Man Traced to Shaving Brush

On January 16, 1939, the Iowa State Department of Health received a communication from the Chicago office of the United States Public Health Service, reporting a case of anthrax in a resident of North Dakota. Epidemiologic investigation of the case traced the probable source of infection to a shaving brush of foreign manufacture; anthrax bacilli were isolated from the pustule, from the shaving brush used by the patient prior to his illness, and from other samples of the same lot of shaving brushes.

The brushes which were found to harbor Bacillus anthracis were distributed through a wholesale house in Minnesota. The brushes bore the stamp "Imperial Sterilized" or "Obelisk Sterilized" and "Japan 332." The brushes varied in size, had white mixed bristles and enamel wood handles of different colors, and were listed at 80 cents per dozen. The wholesale distributor cooperated fully with federal and state authorities and through United States Public Health Service forwarded a list to the State Department of Health with names and addresses of 225 variety stores in Iowa.

On January 17, the Health Commissioner notified proprietors of all the Iowa variety stores, of the report of a human case of anthrax with the request that all brushes of the type described be forwarded to the Department's State Hygienic Laboratory at Iowa City.

Bacillus Anthracis Found in Shaving Brushes

Study was made under the supervision of M. E. Barnes, M.D., Director of the State Hygienic Laboratory, of seven packages of the specified shaving brushes, received from variety stores. The following report of findings has been made by I. H. Borts, M.D., bacteriologist-in-charge and associate director of the laboratory:

"Gram postitive spore forming bacilli were found in saline suspensions of the ground bristles of five out of eight brushes picked at random, which represent five out of seven different groups of brushes. Three suspensions representing two lots did not show any suspicious micro-organisms.

"Suspensions after heating at 80 degrees C for ten minutes were then injected into guinea pigs. The pigs inoculated with the three suspensions which failed to show micro-organisms on direct sediment smears, remain alive and well at this time (eight days); the remainder died, one in forty-eight hours and four in seventy-two hours. At autopsy, typical pathologic lesions were noted at the site of inoculation, the spleen and liver appeared markedly hemorrhagic and edematous, and micro-organisms having typical morphology were isolated from liver, spleen and heart blood cultures. Reinjection of organ suspensions killed guinea pigs within forty-eight hours. The micro-organisms isolated are without question, Bacillus anthracis."

The table below summarizes in detail the laboratory findings as reported from the State Hygienic Laboratory.

Although it is likely that many individuals in Iowa have recently been exposed to the potential danger of anthrax, no cases have been reported to date as the result of such exposure. Publicity has been given to the existing public health hazard and the collected brushes have been returned to the wholesaler for further instructions from the United States Public Health Service and for subsequent destruction.

TABLE 1—LABORATORY STUDY OF BACILLUS ANTHRACIS IN SHAVING BRUSHES

Store	Number Brushes Received	Brushes Examined	Guinea Pig Number	Pooled Suspension Examined for Gram Positive Spore Forming Bacilli	Guinea Pig Pathology	Guinea Pig Passage
No. 1	19	2	136	Positive	Positive 72 hours	Cultures reinjected. Pig died within 48 hours. Lesions typical and B. anthracis reisolated.
No. 2	16	2	137 138			
No. 3	5	2	139	Positive	Positive 48 hours	Cultures reinjected. Pig died within 48 hours. Lesions typical and B. anthracis isolated.
No. 4	2	2	140			
No. 5	5	2	141	Positive	Positive 72 hours	
No. 6	9	2	142	Positive	Positive 72 hours	
No. 7	1	1	143	Positive	Positive 72 hours	
No. 8	10	0				
No. 9	9	0				
No. 10	7	0				

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INDICTMENT OF THE AMERICAN MEDICAL ASSOCIATION BY THE GRAND JURY

On December 20, 1938, the Additional Grand Jury of the District Court of the United States for the District of Columbia indicted the American Medical Association, the Medical Society of the District of Columbia, the Harris County Medical Society, the Washington Academy of Surgery, and twenty-one individuals on the grounds that they have "engaged in an unlawful combination and conspiracy in restraint of trade in and of the District of Columbia in violation of Section 3 of the Act of Congress on July 2, 1890, known as the Sherman Antitrust Act".

According to the indictment the defendants have combined and conspired together first, for the purpose of restraining Group Health Association, Inc., in its business of arranging for the provision of medical care and hospitalization to its members and their dependents on a risk sharing prepayment basis; second, for the purpose of restraining the members of Group Health Association, Inc., in obtaining, by cooperative efforts, adequate medical care for themselves and their dependents from doctors engaged in group medical practice on a risk sharing prepayment basis; third, for the purpose of restraining the doctors serving on the medical staff of said Group Health Association, Inc., in the pursuit of their callings; fourth, for the purpose of restraining doctors (not on the medical staff of Group Health Association, Inc.) practicing in the District of Columbia, including the doctors so practicing who are made defendants herein, in the pursuit of their callings; and fifth, for the purpose of restraining the Washington hospitals in the business of operating such hospitals.

Space in the editorial pages of the Journal does not permit us to review in as much detail as we should like, the many events which led up to the indictment, nor to present a detailed analysis of the indictment itself. A chronologic record of these events appears in the Organization Section of the January 7, 1939, issue of the Journal of the American Medical Association, page 59, and a complete text of the indictment is published in the December 31, 1938, issue of the same publication, page 2495. Every physician should familiarize himself thoroughly with the contents of these two articles, not only for his own interest and information, but in order that he may discuss the situation intelligently with the lay public which he serves.

The alleged "guilty" acts of the defendants are set forth in the following paragraphs quoted from the indictment:

(a) Defendants have combined and conspired with the plan and purpose to hinder and obstruct Group Health Association, Inc., in procuring and retaining on its medical staff qualified doctors, and to hinder and obstruct the doctors serving on that staff from obtaining consultations with other doctors and specialists practicing in the District of Columbia. Pursuant to this plan and purpose the defendants have performed, among others, the following acts: Defendants (other than defendants Washington Academy of Surgery and Harris County Medical Society) circulated a "white list" of organizations, groups and individuals approved by defendant The Medical Society of the District of Columbia, omitting from said "white list" the name of Group Health Association, Inc., with the intent and purpose of threatening with disciplinary action any doctors, members of defendant The Medical Society of the District of Columbia, who should become members of the medical staff of Group Health Association, Inc., or who should consult with members of the medical staff of Group Health Association Inc. Defendants (other than defendants Washington Academy of Surgery and Harris County Medical Society) instituted disciplinary proceedings against two doctors, who were the only doctors on the medical staff of Group Health Association, Inc., who were members of defendant The Medical Society of the District of Columbia. Principally by means of such disciplinary proceedings, the said defendants induced and coerced one of the said doctors to resign from the staff of Group Health Association, Inc., and brought about the expulsion of the other doctor from membership in defendant The Medical Society of the District of Columbia. Defendant Harris County Medical Society at the request of defendant The Medical Society of the District of Columbia and of the other defendants (except defendant Washington Academy of Surgery), instituted disciplinary proceedings against a doctor on the medical staff of Group Health Association, Inc., who was a member in good standing of said defendant Harris County Medical Society and the only other doctor on the medical staff of Group Health Association, Inc., who was a member of defendant American Medical Association. The doctors against whom the above described disciplinary proceedings were instituted were and are qualified, ethical doctors in good standing; the disciplinary proceedings above described were instituted against these doctors be-

cause of their association with Group Health Association, Inc., and for the purpose of depriving the said Group Health Association, Inc., doctors of the privileges of consulting with other doctors and of using the facilities of the Washington hospitals. The said defendants also instituted similar disciplinary proceedings against a specialist practicing medicine in the District of Columbia, on the alleged ground that he had consulted with a doctor on the staff of Group Health Association, Inc., intending thereby to penalize the said specialist for failing to boycott Group Health Association, Inc., doctors and thereby to induce other specialists to boycott Group Health Association, Inc., doctors. Principally by the means hereinabove described, defendants have coerced doctors to boycott Group Health Association, Inc., by refraining from becoming members of or by resigning from the medical staff of Group Health Association, Inc., and to boycott doctors on the medical staff of Group Health Association, Inc., in procuring and retaining on its medical staff qualified doctors and hindered and obstructed doctors on the medical staff of Group Health Association, Inc., in obtaining consultations with doctors not on that staff.

(b) Defendants have combined and conspired with the plan and purpose to hinder and obstruct Group Health Association, Inc., in obtaining access to hospital facilities for its members, and to hinder and obstruct the doctors on the medical staff of Group Health Association, Inc., from treating and operating upon their patients in Washington hospitals. Pursuant to this plan and purpose, defendants have performed, among others, the following acts: Defendants (other than defendants Washington Academy of Surgery and Harris County Medical Society) circulated among the Washington hospitals a "white list" of organizations, groups and individuals approved by defendant The Medical Society of the District of Columbia, omitting from said "white list" the name of Group Health Association, Inc., with the intent and purpose of threatening with punitive action any such hospital which should admit to its courtesy staff a doctor on the medical staff of Group Health Association, Inc., however qualified or however great his professional skill. Defendants (other than defendants Washington Academy of Surgery and Harris County Medical Society) urged and demanded that the Washington hospitals admit to their staffs only those doctors who were members of defendant The Medical Society of the District of Columbia or of neighboring medical societies affiliated with defendant American Medical Association and, hence, of defendant American Medical Association, well knowing that doctors on the medical staff of Group Health Association, Inc., were not permitted, and intending that they be not permitted, to become or remain members of such societies. Defendant Washington Academy of Surgery recommended to those Washington hospitals which made inquiry of it that said hospitals exclude from their courtesy staffs the surgeon on the medical staff of Group Health Association, Inc. The Washington hospitals have failed and refused to appoint the surgeon on the medical staff of Group Health Association, Inc., to their courtesy staffs notwithstanding the fact that said surgeon is qualified and competent in the practice of surgery; in so doing, the said hospitals based their actions principally upon the membership of said surgeon on the medical staff of Group Health Association, Inc. Defendants (other then defendants Washington Academy of Surgery and Harris County Medical Society), by threatening to deprive him of courtesy staff privileges at a Washington hospital, induced a physician on the medical staff of Group Health Association, Inc., to resign from the said Association's medical staff. Principally by the means hereinabove described, defendants have coerced the Washington hospitals to boycott Group Health Association, Inc., and the doctors on the said Association's staff. By thus coercing the Washington hospitals, defendants hindered and obstructed Group Health Association, Inc., in obtaining access to hospital facilities for its members and hindered and obstructed the doctors on the medical staff of Group Health Association, Inc., from treating and operating upon their patients in the Washington hospitals.

Thus is stated the case of the Department of Justice against American Medicine. This is but one side of the story; a conviction has not been secured. The House of Delegates has given the officers of the American Medical Association full authority to carry the fight to the last court to determine the issue. If the Association wins, the principles of medical ethics will continue to control the actions of members in the practice of their profession as they have always done. If it loses

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VITAMIN B_1 DEFICIENCY

The confusion of terminology and the multiplicity of components in the "Vitamin B complex" have resulted in a chaotic state as far as our knowledge of the various factors are concerned. The rapidity with which contributions to the knowledge of this food factor are presented makes it difficult to keep informed. In an endeavor to lift the veil of confusion it is our purpose to indicate those factors of the Vitamin B complex concerned in human nutrition and to discuss in some detail their rôle in human economy. To date some nine distinct fractions of the Vitamin B complex have been described. Of this number only three have any proved rôle in human physiology: namely Vitamin B_1 or thiamin, riboflavin and the P-P or pellagra-preventing factor. The present article is devoted to a discussion of Vitamin B_1.

It is interesting to recall that the story of Vitamin B_1 dates from 1897 when Eijkman demonstrated that the disease beriberi could be produced experimentally in fowls, and Grijns evolved the theory of nutritional deficiency to explain the disease. In 1911 Funk coined the word "vitamine" and obtained from rice polishings the substance which was active in the cure of beriberi, but it was not until 1927 that Jansen and Donath isolated the antiberiberi vitamin. Williams demonstrated the structural formula in 1936 and synthesis of the compound was accomplished. Williams determined that Vitamin B_1 consisted of a pyrimidine group and a thiazole group, and the crystalline salt has the chemical formula $C_{12}H_{18}N_4SOCl_2$. Based on the chemistry of the compound, Williams proposed the name "thiamin" and this appellation has been almost universally

accepted. The product is now available commercially as thiamin chloride.

The international standard for Vitamin B_1 consisted of an adsorbate, an extract of rice polishings adsorbed on fuller's earth, and the international unit represented ten milligrams of the standard adsorbate. The present literature indicates that this standard will be superceded by a standard expressed in milligrams of thiamin chloride. As marketed at the present time, one milligram of thiamin chloride represents 300 international units, or in other words, one international unit consists of .000003 of a gram of thiamin.

According to Cowgill the human requirement for Vitamin B_1 is directly proportional to both the body weight and the caloric intake. For an adult of 150 pounds this means an intake of about 280 international units daily. For infants and children the optimum requirement is from 80 to 200 international units. The clinical factors which increase the requirement are increased metabolism, diminished absorption, and loss through excretory channels.

In contrast to Vitamins A and C there are no concentrated food sources of Vitamin B_1 so it is necessary to incorporate several food sources in the diet. Inasmuch as Vitamin B_1 is not stored in the body to any great extent it must be provided for in the diet from day to day. In general the chief natural sources of thiamin are vegetables, particularly the legumes, fruits, nuts, whole grains, eggs, meat and milk. The vitamin value is appreciably reduced when foods are cooked over 100 degrees for any length of time. According to Cowgill a large fraction of our population subsists on diets of borderline adequacy.

The physiology of thiamin indicates that it plays a definite rôle in carbohydrate metabolism, consisting of the oxidative removal of pyruvic acid, which is one of the oxidative steps in the catabolism of carbohydrate. In human beriberi as well as in the experimental animal there is an increase in the blood pyruvic acid. The clinical state of beriberi is not attributed to the toxic effect of the pyruvic acid, but to the fact that in a disturbance of metabolism of glucose the function of the nerve cell is disturbed.

The therapeutic application of Vitamin B_1 consists primarily in the prevention and treatment of beriberi. The recent work of Cowgill, Jolliffe and others, indicates a definite application of thiamin in the treatment of alcoholic polyneuritis, as well as in the treatment of gestational, diabetic and postinfectious polyneuritis. The evidence is convincing and the results of treatment are very encouraging. Vitamin B_1 is of value in securing optimal growth in infants and children. Reports in the literature indicate that children on diets with a Vitamin B_1 deficiency are definitely retarded in growth. The rôle of the vitamin in anorexia is tenable only when the diet is obviously deficient in the vitamin.

It seems apparent that our concept of Vitamin B_1 deficiency is subject to alteration. Instead of thinking it is confined to the heathen Chinese who subsist on polished rice, it is becoming increasingly clear that Vitamin B_1 deficiency is endemic in the United States, and that adequate provision for this factor in the diet is necessary for optimum health and growth, and for the prevention of polyneuritis from various causes.

PROGRESSIVE PLANS FOR MEDICAL CARE*

The last few months have seen the rapid development, in different states, of plans to furnish medical care for various groups of the population on a prepayment basis. None of these plans has been sufficiently worked out for us to have available the full details of their provisions, but from news items and reports in the medical journals it is possible to note the general trends. The schemes are of three types; first, compulsory insurance schemes, under government control for the prepayment of medical care by certain groups of low income; second, voluntary insurance schemes offering practically full medical and hospital care; and third, cash indemnity plans for the payment of a maximum amount expended for medical services in any given year.

Newspapers report that Utah has passed a compulsory insurance plan for furnishing medical care to the low income group in that state. As yet details are not available. Experience tells us that this will undoubtedly be under-financed and the medical profession will, in effect, be asked to underwrite the plan by furnishing the needed medical services for whatever amount of money may be available after overhead expenses have been paid in full. Such a scheme, on a trial basis for one year, with the possibility of repeal might be worthwhile in furnishing information as to what might be an adequate charge for adequate services to a large group of the population. However, if such a plan becomes a state law, there is almost no chance for repeal, and it will be very difficult to increase the rates if those originally provided prove inadequate.

The California State Medical Society, through the action of a special called meeting of its House

*From the Medical Economics Committee.

of Delegates in December, approved a plan for offering medical, surgical and hospital care to a low income group for a set fee per family. The preliminary draft of the plan has been studied, but the final plan, together with a statement of services to be provided, the method of administration and the premium to be charged, has not been published. This plan is open to the same objections which have justly been raised regarding the Farm Security Administration medical care program in Iowa and other states. There is a general feeling that the rate charged will not be adequate; that the compensation to the physician will be below that which is consistent with procuring the best medical services, and that there will be abuses through unnecessary demands for medical services on the part of many of the insured, and the furnishing of an unnecessary amount of medical services by some physicians. The probable cost of hospitalization, on a group basis, in an urban territory has been determined through the experience of the hospital insurance companies, but no one knows what the cost of adequate medical care will be. Instead of furnishing adequate care, regardless of cost, there will be a tendency to limit the services to those which can be covered by the funds available.

The Michigan State Medical Society has authorized its council to proceed in developing a prepayment plan for medical care to be available to the low income group in that state. Present plans point toward the adoption of a unit system. For a given sum of money, the insured will be given a certain number of units of medical service. For example if 1,000 units are purchased it is divided into sections; an office call is one unit, a house call is two or two and one-half units, and similar values are given to all common medical services. The insured will be charged with the services rendered and upon using his 1,000 units will no longer be covered unless he purchases more insurance. This will tend to encourage him not to demand unimportant or unnecessary services so that he will be provided for if major illnesses occur.

In New York plans are under way for offering of cash indemnity toward the payment of medical bills. Before the plan can finally be put into action, it will be necessary for the state legislature to pass an enabling act. The plan seems to be workable and the board of directors includes a number of well known and dependable physicians, among them a former president of the American Medical Association. The plan proposes to offer indemnity up to $500 in any one year on medical bills contracted by the insured member. The physicians care for the patients when called without regard to the insurance feature. The rates allowed by the company are based on the compensation rates in the state of New York. At the conclusion of the illness the patient must pay, in cash, the first ten dollars of the physician's fee. On presentation of the receipt from the physician for this ten dollars, the insuring agency then assumes the balance of the obligation, gives the patient a receipt in full, and pays the balance directly to the physician. Within the limit of $500 any medical or surgical service is covered, and by requiring the insured to pay the first ten dollars small items are excluded. The patient is deterred from contracting small bills, yet not deterred from calling the physician in case of severe illness. It is stated in the prospectus that the originators of the plan have few data on which to base the amount of premium charged and that after one year's experience it may be necessary to increase the charge or possible to reduce it. The organization is non-profit, and although not officially part of the medical society the plan has been developed with the complete knowledge and cooperation of the societies in the areas which it will serve.

The medical profession will watch with interest these plans as they begin operation. They will, without doubt, furnish a great deal of valuable information as to costs, services rendered, and the effect on medical care. At present it seems that there is less extreme need for these plans in Iowa than in some of the states with the larger industrial centers. However, we must be developing plans which will best suit the conditions in this state, and be ready to put them into effect when necessary. In the meanwhile we should not feel, as some express it, that these states have "sold us down the river", but rather that they are making an honest effort toward the solution of a very difficult and pressing problem.

INCOME TAX RETURNS

Income tax blanks have been mailed both by the Federal Collector of Internal Revenue and the State Board of Assessment and Review to those persons who paid income taxes in 1938. Failure to receive a blank does not relieve a person from the responsibility of filing a return if his income is large enough to be covered by either law. Returns are due in March, and a brief re-statement of the rules and regulations is given at this time for the benefit of those physicians who may be filing returns for the first time, and to refresh the memory of those who have filed before. A more detailed explanation of the returns for the federal

government is given in the January 14 issue of the *Journal of the American Medical Association*, page 151.

Federal

Federal income tax returns are due on or before March 15. Those liable for making returns are single persons with a net income of $1,000 or over, married couples with a net income of $2,500 or over, and all individuals with a gross income of $5,000 or over in 1938. The tax is paid on gross income less allowable deductions, exemptions and earned income credit. A physician's gross income is the total amount of money received by him during the year for professional services, regardless of when the services were rendered, plus money he has received as profits, from investments and speculation, or as compensation and profits from other sources.

From this gross income the physician may subtract allowable deductions. Under this are included all current expenses necessary in carrying on his practice, such as office rent, office maintenance supplies (dressings, drugs, chemicals, professional journals, and professional books, furniture or instruments which have a useful life of less than one year), dues to medical societies, travel expense incurred in attending patients or medical meetings (but not for attending postgraduate courses), automobile expense incurred in the practice of his profession, social security taxes paid on employees, insurance premiums (malpractice insurance and other insurance necessary in the practice of his profession), and the usual deductions such as general property taxes, state income tax paid in 1938, Iowa sales tax (provided an itemized record of same is kept), contributions to church and organized charity, and interest on indebtedness. The three cent state tax on gasoline is also deductible for gasoline used in pleasure cars. These deductions are explained on the forms. Depreciation may be charged on equipment used over a period of years, but must not be more each year than is necessary to cover the actual depreciation.

The net income figure is obtained by subtracting the allowable deductions from the gross income. Of this net income, the physician is allowed a credit of ten per cent of the earned net income, provided the net income is not over $14,000. If the net income is less than $3,000, the physician may deduct ten per cent of the net income regardless of whether or not it is earned income. In addition he is allowed an exemption of $1,000 if unmarried, $2,500 if married and living with his wife, and $400 for each dependent. This figure, plus the earned income credit, is deducted from the net income, and the tax figured on the balance. Rates for computing the tax are set forth on the forms, and are roughly four per cent on net incomes up to $4,000. Above that figure, a surtax is imposed.

State

State income tax returns are due on or before March 31. Those responsible for making returns are single persons with a net income of $1,000 or more, married couples with net income of $1,500 or more, and all individuals with a gross income of $3,000 or more in 1938. Tax is paid on gross income less allowable deductions. Gross income includes the money received by the physician for services rendered, plus such money as he may receive from investments and speculation, and other sources. If part of the income is for services rendered prior to 1934, such payments should not be included, because income for years prior to 1934 is not taxable. Physicians may compute their tax upon the basis of actual money received, or upon the basis of charges for services made during the year, depending upon the actual method used in keeping accounts.

Allowable deductions for physicians include professional expenses and the usual deductions authorized by law, such as general property taxes, federal income tax paid in 1938, sales tax, contributions to church and organized charity, interest on indebtedness, etc. These deductions are explained on the form. Under professional expenses may be included the cost of supplies used in practice, automobile expense incurred in making professional calls, dues to professional societies, subscriptions to professional journals, office rent, and maintenance. Insurance premiums (malpractice and other professional insurance) are deductible, as are social security taxes paid on employees. The three cent state tax on gasoline used for pleasure may be deducted. Travel expense incurred in attending professional conventions and postgraduate courses may *not* be deducted.

These allowable deductions may be subtracted from the gross income to give the net income figure. The tax rate is given on the forms, and is, briefly, one per cent on the first $1,000, two per cent on the second $1,000, etc. On $4,000 and higher incomes, five per cent tax is paid. From the tax as figured, a deduction of $10 may be made for a single person, $20 for a married couple, and $5 for each dependent. A change in the Iowa income tax law in 1937 makes individuals who rent property from persons residing outside of the state liable for collection of the tax due the state.

It must be remembered that in computing both the federal and state tax, the burden of proof is on the taxpayer. He must keep accurate records to show he is entitled to the deductions claimed. In cases where his office is included in his residence, he is entitled to deduct only that portion of the rent which would be charged to the office. This is true also in regard to automobile expense; only that expense incurred in professional practice is deductible.

A CONTROLLED EXPERIMENT IN MEDICAL CARE*

Following suggestions and criticisms received from various county medical societies, and after further study, the Medical Economics Committee revised the prepayment plan for the medical care of the clients of the Farm Security Administration. The general plan for procedure, and the services covered were outlined, leaving the amount of the fee collected to be determined by the county medical society in each case as the members of the society studied the list of clients and considered their ability to pay.

It was felt that it would be wise to separate hospital and medical services, leaving the provision of necessary hospitalization to the client and the Farm Security Administration. Further safeguards were included, providing that if any client persists in abusing the privilege of calling the doctor by unnecessary demands for services, he could be removed from the list by action of the county medical society and a prorated portion of his payment be returned to him. Discretion as to the necessity of immediate response in case of night calls is to be left with the physician. It is further recommended that the funds be distributed on a six months' basis, in order to equalize the amounts paid in different months, or that 50 per cent of the bills be paid during each month and the balance in the fund be used at the end of the year to bring the total payment as close to 100 per cent as possible.

With these changes it is felt that the plan will be applicable to some counties, and will not work an undue hardship upon the profession in those counties, while insuring them of a fairly adequate payment for services rendered. In going over the clients of the Farm Security Administration it is found that they are already well rehabilitated in some counties, and the society sees no need for offering them any special plan of payment for medical services. In other counties the clients are definitely in a marginal group and the physicians desire to give the plan a trial. This plan has the advantage of being entirely under the control of the local county society. The Farm Security Administration has no voice in its administration, serving only to furnish the funds to the client either through a loan or a grant. After the money is deposited with the trustee appointed by the county society, the Farm Security Administration has no further hand in either the conduct of the plan or the method of furnishing services. If, after a year's trial, the plan is unsatisfactory it can be dropped by the society. There is no obligation, either written or implied, to continue after the first year. If it seems fairly satisfactory, it can be continued in future years, and any adjustments as to fees or rules can be made before the contracts or agreements for the second year are formulated.

In attempting to work out possible future plans for some method of prepayment for medical services the committee finds no statistics or records of any type which will help them to determine what the cost of fairly adequate medical services should be where the factor of mileage enters in. The percentage of hospitalization in rural work is also entirely different than that in the urban areas where most figures on hospitalization have been secured. With a year's experience in dealing with several hundred Farm Security Administration clients we will be able to gather statistics on which to base plans for an adequately financed prepayment plan for medical care. Controlled experiment is the modern medical manner of evaluating new methods of treatment. In this plan we have an experiment, entirely under our control, to compare with our previous experience with these same individuals. After a reasonable period of this experiment we can either drop it as entirely unsatisfactory, or continue and expand it with whatever modification may seem to be desirable.

We do not recommend that any large number of counties try this plan during the first year. We would prefer that a few counties, those with the largest number of Farm Security Administration clients in the poorest financial condition, operate under the agreement this year if they so desire. By selecting those sections of the state in which the need is most acute, we feel we can obtain a fair estimate of the workability of this modified plan. Obviously if it operates satisfactorily in these counties, the plan can serve as a basis for additional proposals looking toward more adequate medical care for all the people. We have had requests from several county societies who wish to make the experiment, and we hope to be able to report their experience after one year, be it favorable or unfavorable.

*From the Medical Economics Committee.

THE OPEN FORUM

A PHILOSOPHY OF SUCCESS

C. W. Ellyson, M.D., Waterloo

Do YOU want Socialized Medicine?

Too many, helplessly, indifferently, and often maliciously, answer, "It is here," or "It is coming, what can we do about it?" Too many good citizens and too many good physicians accept too readily what Henry C. Link, in his Rediscovery of Man, calls, "a philosophy of defeat." He continues, "Americans today are in danger of accepting a philosophy of defeat. We need to distinguish between social security and personal security. Social security represents something that society does for the individual. Personal security is something the individual does for himself. Social security consists largely of things and moneys given to the individual. Personal security consists of habits and skills which the individual develops for himself and which enable him to be self sufficient and independent under almost any condition —a philosophy of defeat makes failure inevitable even with the most richly endowed person; a philosophy of success, a determination to make the most of oneself can do miracles even with one poorly endowed."

A philosophy of success has enabled premedical students through years of hard physical and mental labor in common school, high school, college, premedical and medical school to qualify as physicians for the various examining boards that will permit them to deliver a standard health service to a rather unappreciative public. A philosophy of success has led them, as physicians, to take years of expensive interneships, fellowships, and assistantships to develop habits and skills, diagnostic and surgical technic, enabling them to meet the highest standards of a learned profession and make them "self-sufficient and independent under almost any condition" involving their profession. With this philosophy of success and the expenditure of thousands of dollars worth of time and money, will these same physicians, qualified for, and delivering to the public, the best health service of any country in the world, turn and accept the philosophy of defeat at the first waving of the magic wand from the gas bombs of those communistically inclined, intimidating, legal, social, and political gangsters, hired by subsidized foundations and a federal government at public expense?

Before accepting this philosophy of defeat, which "makes failure inevitable even with the most richly endowed person," physicians must do a few things necessary to rational intelligent action. They must study and know more thoroughly their own social and economic relationship as individuals, as physicians, and as citizens, and, knowing this relationship thoroughly, they must act more intelligently and function more successfully in their economic, civic, social and professional fields. A fairly intimate personal knowledge of physicians in their everyday life impresses one with the fact that they are so absorbed with their professional, social and civic activities that they have taken little time to study those economic and social relationships most vital to them as citizens and physicians. After a heavy professional day on the road, at the hospital, or in the office, they read a little predigested news, listen to the radio, attend the movie, or theater, play poorly at golf or bridge, rarely attend lectures and church, and again turn on the radio for the final news digest and retire, exhausted physically and mentally. They pride themselves, professionally, on being up to date in literature, training and equipment in the lines of their most individual interest, but relatively few physicians are sufficiently interested in the management of their professional economic affairs to read their own journals, present a paper at their own meetings, or even attend same unless a paid dinner is held out as bait for their attendance. Relatively few physicians attend medical conventions, county, state, or special, the larger majority remaining where they can criticize those more active in these groups, as "political doctors" intent on personal publicity. Very few physicians interest themselves actively as citizens and are too often inclined to criticize those who do.

Dr. Nathan B. Van Etten in his excellent article, "The Doctor at the Crossroads" in the January, 1939, issue of the Journal of the Iowa State Medical Society, states, "It is the doctor's job to rise from his contemplative seat at the crossroads and to keep himself actively organized for the protection of the public from false ideas; it is his job to educate himself not only in the field of preventive medicine, but in efficient citizenship. American physicians must assume social leadership if they would avoid the rôles of pawns in the hands of those who are playing the game of political strategy. American physicians face problems which seemingly new, are almost invaribly old enemies in new clothes. Old world experience should be studied by the lamps of history and lessons applied by intelligent, militant physicians who are willing, if necessary, to become crusaders. Physicians will become effective only when they stand upon their own solid ethical foundations and become civically conscious."

Dr. Van Etten adds that the task of the medical citizen is to participate actively in municipal affairs, to lead in the campaign of preventive medicine, and to teach the taxpayers that the medical care of the indigent is his, the doctor's, responsibility. "Individualism has been sneered at by welfare groups which are struggling for warm places in snug bureaus, but after all is said and after studying all of the European service plans which employ more lay managers than physicians, which pay clerks more than doctors, we must pay tribute to the best traditions we have in this country which are based upon the individual care of the sick by the individual physician."

The American physician represents the highest type of scientific intelligence functioning in a humanitarian service in the greatest democracy of all time. The American physician is delivering a health service second to none in the world today. True, it can be greatly improved. If he will adhere to the philosophy of success and add to his professional service, his full rights of active citizenship in seeing that the racketeers are driven, first, from his own ranks and then from the ranks of those political and social agencies which attempt to dictate and direct a licensed service they do not possess; if he will stand and fight as a physician and a citizen for his own professional and family life and for the health of the public he serves; he will retain and improve the standards of the best health service in the world.

How can the American physician adhere to the philosophy of success? This can only be accomplished by definite intelligent team work of over 100,000 physicians, donating daily over $1,000,000 worth of service to the poor of the United States, together with the hundreds of thousands of professional men and women serving in the allied health groups of the country and the many millions of appreciative patients served daily by these allied health groups. In addition we must have definite intelligent team work on the part of all county, district, and state medical societies and the allied health organizations in directing a definite program of education of the citizens in the essential health problems of an American democracy as compared to that of a subsidized, socialized medical service.

Do YOU want Socialized Medicine? Do you favor a philosophy of success or do you prefer a philosophy of defeat?

We must think, and having thought, we must take some definite action, for we must remember it is our professional home that is being remodeled. We may not want to live in it, and it may no longer even be ours when the job is completed.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Another meeting of special interest to physicians is the Thirty-fifth Annual Congress on Medical Education and Licensure, which will be held in Chicago, at the Palmer House, February 13 and 14. Presiding over the Monday morning session will be Ray Lyman Wilbur, M.D., who will deliver the first address on The Protection of the Public Through the Activities of the Council on Medical Education and Hospitals of the American Medical Association. Other addresses are College Education for the Future Doctor, by James B. Conant, Ph.D., president of Harvard University; The Organization and Subject Matter of General Education, by Robert Maynard Hutchins, LL.D., president of the University of Chicago; and Canadian Experiments in Medical Economics, by T. C. Routley, M.D., LL.D., general secretary, Canadian Medical Association, Toronto, Ontario.

Fred Moore, M.D., of Des Moines, will preside over the Monday afternoon session, opening with a paper on The South as Testing Ground for the Regional Approach to Public Health and Public Welfare, by Howard W. Odum, LL.D., of the University of North Carolina. The remainder of the afternoon will be devoted to a symposium on The Small Hospital.

The program for the Tuesday morning meeting, presided over by John H. Musser, M.D., includes the following addresses: The Program of the National Committee for Mental Hygiene, Clarence M. Hincks, M.D., general director National Committee for Mental Hygiene; Fundamentals of Industrial Hygiene, T. Lyle Hazlett, M.D., professor of industrial hygiene, University of Pittsburgh School of Medicine; The Relation of Anesthesiology to Medical Education, Ralph M. Waters, M.D., department of anesthesia, University of Wisconsin Medical School; and Tenure of Members of the Faculty in Schools of Medicine, Anton J. Carlson, Ph.D., professor of Physiology, University of Chicago.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Medical Economics Committee January 9, 1939

The Medical Economics Committee of the Iowa State Medical Society met in the central office at one p. m. Monday, January 9. Present were Drs. E. E. Shaw, H. M. Ivins, Charles T. Maxwell, T. F. Thornton, and Robert L. Parker.

Matters discussed were as follows: (1) Resignation of Dr. Moerke because of ill health. Dr. Moerke was asked to reconsider and continue as a member of the committee. (2) Requests of two individuals for approval of committee as collection agencies. Decision deferred until physicians in locality of these individuals should be consulted. (3) Farm Security Administration medical program. Changes in present program were suggested and were then presented to Mr. Hayes and Mr. Hammerly of the Farm Security Administration. Discussion followed, and it was decided to redraw the plan and advise the county medical societies of the new basis for care of these clients. (4) Report on Iowa Hospital Association's decision to ask legislation permitting nonprofit hospital insurance.

Meeting adjourned at four p. m.

Meeting of the Board of Trustees January 19, 1939

The Board of Trustees of the Iowa State Medical Society met in the central office Thursday evening, January 19, 1939, at seven p. m. Those present were Doctors O. J. Fay, John I. Marker, and Lee R. Woodward.

Business transacted was as follows: (1) Minutes of two previous meetings read and approved; (2) Bills authorized; (3) Audit accepted; (4) Budget for 1939 set up and approved; (5) Allowance of $250.00 to the Polk County Medical Society for annual session expenses authorized. Meeting adjourned at eight-thirty p. m.

SPEAKERS BUREAU ACTIVITIES

SPRING POSTGRADUATE PROGRAMS

Programs for the Eleventh and Fourth District postgraduate courses in medicine and surgery, which are being conducted by the Speakers Bureau, are as follows:

Eleventh District Postgraduate Course
Medicine and Surgery

Jan. 31 Shenandoah—Del Monica Hotel.
Chairman, Harold McK. Bunch, M.D.
"Malignancies of the Urinary Tract"
Rubin H. Flocks, M.D., Iowa City

Feb. 7 Missouri Valley—Risney Cafe.
Chairman, A. C. Bergstrom, M.D.
"Modern Treatment of Anemia"
Willis M. Fowler, M.D., Iowa City

Feb. 14 Red Oak—Hotel Johnson.
Chairman, W. S. Reiley, M.D.
"Medical Treatment of Non-tuberculous Diseases of Lungs"
Horace M. Korns, M.D., Iowa City

Feb. 21 Sidney—American Legion Hall.
Chairman, Ralph Lovelady, M.D.
"Surgical Treatment of Lungs and Pleura"
Vernon W. Petersen, M.D., Iowa City

Feb. 28 Council Bluffs—Mercy Hospital.
Chairman, M. C. Hennessy, M.D.
"Specific Treatment of Infectious Diseases"
Philip C. Jeans, M.D., Iowa City

Mar. 7 Glenwood—K. P. Hall.
Chairman, D. W. Harman, M.D.
"Head Injuries"
Walter D. Abbott, M.D., Des Moines

Mar. 14 Harlan—Saylor Hotel.
Chairman, A. L. Nielson, M.D.
"Peptic Ulcer"
Andrew B. Rivers, M.D., Rochester*

Mar. 12 Atlantic—Whitney Hotel.
Chairman, R. A. Becker, M.D.
"Minor Surgery of Today"
Frank R. Peterson, M.D., Iowa City
Dinner: 6:00 p. m.-7:00 p. m.
Lecture: 7:00 p. m.-9:00 p. m.
(Dinner—75c)

* Tentative.

Fourth District Postgraduate Course
Medicine and Surgery

Cherokee—State Hospital
Chairman, C. H. Johnson, M.D.

Feb. 8 "Modern Treatment of Anemia"
Willis M. Fowler, M.D., Iowa City

Feb. 15 "Medical Treatment of Non-tuberculous Diseases of Lungs"
Horace M. Korns, M.D., Iowa City

Sac City—Park Hotel
Chairman, J. R. Dewey, M.D., Schaller

Feb. 22 "Surgical Treatment of Lungs and Pleura"
Vernon W. Petersen, M.D., Iowa City

Mar. 1 "Specific Treatment of Infectious Diseases"
Philip C. Jeans, M.D., Iowa City

Ida Grove—Baxter Hotel
Chairman, E. S. Parker, M.D.

Mar. 8 "Head Injuries"
Walter D. Abbott, M.D., Des Moines

Mar. 15 "Peptic Ulcer"
Andrew B. Rivers, M.D., Rochester*

Carroll—St. Anthony Hospital
Chairman, W. L. McConkie, M.D.

Mar. 22 "Minor Surgery of Today"
Frank R. Peterson, M.D., Iowa City

Mar. 29 "Malignancies of the Urinary Tract"
Nathaniel G. Alcock, M.D., Iowa City*
Lecture: 7:00 p. m.-9:00 p. m.

Important Notice: Both meetings at Cherokee will be preceded by six o'clock dinner.

* Tentative.

Registration in the courses is open to all nurses and assistants in these districts, as well as physicians. The fee for the entire course of eight lectures is $10; the fee for individual lectures is $2. The Speakers Bureau especially urges all physicians within driving distance of the centers to attend the lectures and take advantage of the opportunities the instructors are making available to them.

The physicians of the Second District have requested a general postgraduate course to be held at the Hotel Hanford in Mason City, starting around the first of March. This course will run for six weeks, and the final program will appear in the March issue of The JOURNAL.

RADIO SCHEDULE

WOI and WSUI—Tuesdays at 4:00 p. m.

Feb. 14 Rest and Recreation (4-H Club Series), A. A. Schultz, M.D.

Feb. 21 Middle Ear Infections, S. D. Maiden, M.D.

Feb. 28 Protection from Disease (4-H Club Series), R. H. McBride, M.D.

Mar. 7 Bronchitis, L. E. Cooley, M.D.

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—MRS. DEAN W. HARMAN, Glenwood
Secretary—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City
Treasurer—MRS. WILLIAM R. HORNADAY, 3011 High Street, Des Moines

FROM YOUR HYGEIA COMMITTEE

Dear Auxiliary Members:

Now that the holiday rush is over, I hope and trust you are all ready to put *Hygeia* over by getting it before teachers, mothers, nurses and 'teen age boys and girls, as well as families, both young and old. As you know, *Hygeia* is the only authentic health periodical available in this country; as such, it is the best medium for reaching the people. So few have information on the progress of medical science and the scientific means for the prevention of disease, and the American Medical Association urges the Woman's Auxiliary to recognize the promotion of *Hygeia* as one of its chief activities. Some auxiliaries have found it possible to present subscriptions to schools and institutions where otherwise it would not be placed. These gift subscriptions have become a definite, worthwhile project with them.

There are many happy and pleasant ways of making money for subscriptions. Teas and pot luck suppers, with games and fun for all, can be made very profitable. A "white elephant sale" will bring in money, and plenty of fun can be had by the participants with little expense to anyone. An old-fashioned spelling bee is not only fun, but can be educational as well. We suggest that for any type of affair, a talk on *Hygeia* be scheduled, setting forth the advantages to be gained by consistent reading of the periodical. It is our earnest hope that every member of the Auxiliary will feel it her responsibility to help our medical profession get authentic health information in the hands of the lay public, and that every member will realize *Hygeia* is the simplest and easiest manner in which this task can be accomplished. If each member will make an effort in this direction, we will be able to bring Iowa up in the list to occupy a much more desirable rating than she now has.

The amount of information one can collect by being a devoted reader is surprising, and there will be many opportunities when one can pass on valuable information. I loan my magazines to many, among them the custodian of the building in which I live. This man has two children, and when the boy was taken very ill with acute appendicitis, the mother went for the electric pad and a cathartic. The father said, "Oh no, you mustn't do that. *Hygeia* says to use ice packs, and send for the doctor at once." As a result the boy was rushed to the hospital and operated upon at once. If these parents had given the usual home remedies and waited until morning, who can tell what the outcome might have been? This is only one concrete illustration of the vast amount of good just a little accurate information can accomplish. Numerous other evidences are taking place daily, and we, as physicians' wives, should make it possible for these people to keep informed on matters pertaining to health.

Mrs. J. C. Rockafellow, Chairman
Hygeia Committee

HEALTH ESSAY CONTEST

The Sixth Annual Health Essay Contest, sponsored by the Woman's Auxiliary to the Iowa State Medical Society and the Speakers Bureau of the Iowa State Medical Society, has just been announced. The subject for this year is "Good Health and How to Maintain It," and all essays must be in the hands of the contest committee chairman, Mrs. W. A. Seidler of Jamaica, by March 15, 1939.

Any high school student in Iowa is eligible to participate in the contest, and the length of the essay is not to exceed 1,200 words. As in the past, prizes will be awarded as follows: first prize, $20.00; second prize, $10.00; third prize, $5.00; and ten one dollar prizes to the next ten highest ranking essays. An additional prize to the winner of first place will be a trip to a centrally located broadcasting station to present the winning essay over the radio. In addition, schools whose essays win first, second and third place will receive a year's subscription to *Hygeia*, the Health Magazine. Announcement of the winners will be made on April 1, 1939.

The four best essays from each school may be submitted. They should be typewritten and double spaced. The student's name should not appear on the essay, but the student's name, town, county, grade and superintendent's name should be typed on a small piece of paper and clipped to the essay. Each essay received by the contest committee will be given a number and no judge shall know to which student that number has been assigned. Preliminary elimination will be made by members of the Woman's Auxiliary, and the final judges will be:

1. A member of the State Department of Public Instruction.
2. A member of the State Department of Health.
3. A member of the Iowa State Medical Society.
4. Two members of the Woman's Auxiliary to the Iowa State Medical Society.

SOCIETY PROCEEDINGS

Boone-Story Society

Thomas J. Dry, M.D., associate physician in the cardiology section of The Mayo Clinic, Rochester, Minnesota, was guest speaker for members of the Boone and Story County Medical Societies, at a meeting held in Boone, Friday, January 20. Dr. Dry spoke on A Rationale for the Management of Heart Disease.

Clarke County

Newly elected officers for the Clarke County Medical Society are: Dr. W. F. Dean of Osceola, president; Dr. G. I. Armitage of Murray, vice president; Dr. K. R. Brown of Osceola, secretary and treasurer; Dr. C. R. Harken of Osceola, delegate; and Dr. F. S. Bowen of Woodburn, alternate delegate.

K. R. Brown, M.D., Secretary

Dallas-Guthrie Society

The regular quarterly meeting of the Dallas-Guthrie Medical Society was held in Perry, Thursday, January 19, with the following program: Urology in General Practice, H. E. Haymond, M.D. of Perry; and The Diagnosis and Treatment of Syphilis (illustrated lecture), Robert E. Hansen, M.D., of the State Department of Health, Des Moines.

Des Moines County

The Des Moines County Medical Society was addressed on Tuesday, January 10, by Frank R. Richmond, M.D., of Fort Madison, on the subject, Fifteen Years of Obstetric Practice. Another feature of the program was a paper presented by George B. Crow, M.D., of Burlington, on Therapeutic Effects of Sulfanilamide Pyridine.

E. P. Russell, M.D., Secretary

Floyd County

Officers elected to serve Floyd County Medical Society during 1939 are as follows: Dr. J. B. Miner, Jr., president; Dr. H. A. Tolliver, vice president; Dr. Ray A. Fox, secretary and treasurer; Dr. O. H. Banton, delegate, and Dr. Fox, alternate delegate. All officers are of Charles City.

Ray A. Fox, M.D., Secretary

Fremont County

The annual meeting of the Fremont County Medical Society was held in Sidney at the Legion Hall, Monday, January 23, with the following results: Dr. Ralph Lovelady of Sidney, president; Dr. Kenneth Murchison of Sidney, vice president; Dr. A. E. Wanamaker of Hamburg, secretary and treasurer; Dr. Murchison, delegate, and Dr. Wanamaker, alternate delegate. Robert D. Schrock, M.D., of Omaha, addressed the First Aid Class, taking as his subject, Accidents of Bones. The various doctors of the society have been addressing the First Aid Class every Monday evening for seventeen weeks. Nearly one hundred attend these first aid meetings, which have been most successful, due in large part to the efforts of Dr. Ralph Lovelady, chairman of the County Red Cross Unit, who has been most active in conducting this worthwhile project.

A. E. Wanamaker, M.D., Secretary

Hardin County

Willis M. Fowler, M.D., of the State University of Iowa, College of Medicine, furnished the scientific program for the Hardin County Medical Society at a meeting in Eldora, Thursday, January 12. Dr. Fowler addressed the group on Blood Examinations; Clinical and Diagnostic Values.

W. E. Marsh, M.D., Secretary

Johnson County

The Johnson County Medical Society met in regular session at the Hotel Jefferson in Iowa City, Wednesday, January 4, and the following program on The Obstetric Significance of Gonorrhea was presented: The Relation of Gonorrhea to Childbearing, E. D. Plass, M.D.; The Laboratory Diagnosis of Gonorrhea, R. E. Trussell, M.D.; Latent Gonorrhea, W. W. Tucker, M.D.; and Variations in the Virulence to, and Individual Resistance to, the Gonococcus, W. M. Hale, M.D.

R. J. Prentiss, M.D., Secretary

Mitchell County

Tuesday, January 3, members of the Mitchell County Medical Society met in Dr. R. A. Culbertson's office in St. Ansgar, to draw up a new fee schedule for presentation to and approval of the Board of Supervisors, to replace the schedule in force since November 16, 1933. Because of the time necessary for this consideration, no scientific program was presented.

R. A. Culbertson, M.D., Secretary

Osceola County

The annual meeting of the Osceola County Medical Society was held Friday, December 30, and the following officers elected for this year: Dr. H. W. Schoon of Sibley, president; Dr. J. B. Padgham of Ocheyedan, vice president; Dr. F. P. Winkler of Sibley, secretary and treasurer; Dr. H. B. Paulsen of Harris, delegate, and Dr. C. C. F. Bosch of Melvin, alternate delegate.

F. P. Winkler, M.D., Secretary.

Palo Alto County

Newly elected officers for the Palo Alto County Medical Society are: Dr. R. J. Brink of Ayrshire, president; Dr. J. P. McManus of Graettinger, vice president; Dr. P. O. Nelson of Emmetsburg, secretary and treasurer; Dr. H. Robert Powers of Emmetsburg, delegate, and Dr. George H. Keeney of Mallard, alternate delegate.

P. O. Nelson, M.D., Secretary

Polk County

Dr. Russell C. Doolittle of Des Moines assumed the presidency of the Des Moines Academy of Medicine and Polk County Medical Society, at the annual meeting of that organization held Tuesday, January 31, at the Des Moines Club in Des Moines. Officers elected at the business session are: Dr. Howard D. Gray, president elect; Dr. N. Boyd Anderson, secretary and treasurer; Drs. N. Boyd Anderson, Walter E. Baker, James A. Downing, Lee Forrest Hill and Fred Moore, delegates, and Drs. O. W. King, Elmer E. Kottke, Clifford W. Losh, Joseph B. Priestley and John Russell, alternate delegates.

Scott County

Ford Hick, M.D., associate in medicine, University of Illinois, College of Medicine, was entertained by the Scott County Medical Society at the meeting held Tuesday, January 3, at the Lend-A-Hand Club in Davenport. Dr. Hick spoke on Pneumonia, and illustrated his address with lantern slides and a film prepared by Dr. Bullowa on his methods for the treatment of pneumonia. After the business and scientific sessions, Dr. Henry A. Meyers, who is retiring after completing ten years as secretary of the society, was honored in an appropriate address by Dr. James Dunn. Dr. Meyers was then presented with a solid gold wrist watch from the members of the Scott County Medical Society.

P. E. Gibson, M.D., Secretary

Sioux County

The Sioux County Medical Society met Tuesday, January 10, at Dr. H. J. Kooiker's office in Hull, where the following papers were presented: Fractures of the Mandible, C. L. Beach, D.D.S., of Hull; Acute Abdominal Emergencies, Gerrit Maris, M.D., of Hull, and Pneumonia Problems of Today, H. J. Kooiker, M.D., of Hull.

C. B. Murphy, M.D., Secretary

Story County

The annual meeting of the Story County Medical Society was held Friday, January 6, in the office of Dr. E. B. Bush of Ames, and the following named to serve during this year: Dr. L. F. Richardson of Collins, president; Dr. Earl B. Bush of Ames, secretary and treasurer; Dr. W. B. Armstrong of Ames, delegate, and Dr. K. C. Piercy of Maxwell, alternate delegate.

Tama County

Dr. F. W. Gessner of Dysart was elected president of the Tama County Medical Society at the annual meeting of that organization held in Traer, Thursday, January 5. Other officers are: Dr. J. C. Herman of Traer, vice president; Dr. C. W. Maplethorpe of Toledo, secretary and treasurer; Dr. A. J. Wentzien of Tama, delegate, and Dr. F. T. Launder of Garwin, alternate delegate.

Wayne County

Physicians of Lucas and Decatur counties were guests of the Wayne County Medical Society at a meeting held Tuesday, January 10, at the Corydon Hospital in Corydon. The following scientific program was presented: Antipneumococcic Serum, D. R. Ingraham, M.D., of Sewal; Pneumonia Treated with Serum, S. W. Corbin, M.D., of Corydon, and Common Colds, C. E. Lovett, M.D., of Lineville.

Washington County

The Washington County Medical Society held its monthly meeting Tuesday, January 31, in Washington. Following a six-thirty dinner a brief business session was held, after which a three reel motion picture film on autopsies was presented by Mr. L. A. Jones, proprietor of the Jones Funeral Home. This film was secured through the courtesy of the National Selected Morticians, of which Mr. Jones is a member, and was very instructive in the technic of making postmortem examinations.

W. S. Kyle, M.D., Secretary

Sioux Valley Medical Association

The Forty-fourth Annual Meeting of the Sioux Valley Medical Association was held at the Martin Hotel in Sioux City, January 18 and 19. Outstanding guest speakers who appeared before the group include Howard Gray, M.D., of Rochester, Minnesota, who conducted a surgical clinic and spoke on The Pathologic Physiology of the Liver; George B. Eusterman, M.D., also of Rochester, Minnesota, who held a medical clinic and lectured on Chronic Peptic Ulcer; H. Close Hesseltine, M.D., of the University of Chicago, College of Medicine, who spoke on Vaginal Trichomoniasis; A. E. Hansen, M.D., of the University of Minnesota, School of Medicine, who discussed Rheumatic Fever and Rheumatic Heart Disease in Children, and Herman F. Johnson, M.D., of the University of Nebraska, School of Medicine, who delivered an address on Differential Diagnosis of the Chronic Lesion in Long Bones. Officers elected at the business session of the organization are: Dr. F. G. Dewey of Coleridge, Nebraska, president; Dr. Edwin A. Kilbride of Worthington, Minnesota, vice president; Dr. Roy E. Crowder of Sioux City, secretary, and Dr. Frank P. Winkler of Sibley, treasurer. Dr. Winkler succeeds Dr. W. R. Brock of Sheldon, who has served the Sioux Valley Medical Association as treasurer for the past thirty-one years.

Sioux Valley Eye and Ear Academy

Members of the Sioux Valley Eye and Ear Academy met jointly with members of the middle section of the American Laryngological, Rhinological and Otological Society, immediately after the Sioux Valley Medical Association meeting in Sioux City. The latter meeting was held at the Warrior Hotel, January 19 and 20. Those on the program included: A. C. Starry, M.D., of Sioux City, The Pathology of the Tonsil; D. M. Lierle, M.D., of the State University of Iowa, College of Medicine, Iowa City, Malignancies of the Ear, Nose and Throat; M. F. Arbuckle, M.D., Washington University School of Medicine, St. Louis, The Bronchoscopist in the Thoracic Surgery Team; H. L. Williams, M.D., The Mayo Clinic, Rochester, Minnesota, Chronic Encapsulated Empyema of the Petromastoid; Horace Newhart, M.D., of Minneapolis, Audiometers, Hearing Aids and the Otolaryngologist; W. E. Grove, M.D., of Milwaukee, Late Ear Hemorrhage Following Skull Fractures; H. W. Thompson, M.D., of Dubuque, Dental Inlay in Lower Bronchus for Six Months; C. T. Uren, M.D., of Omaha, Serious Complications of Acute Infections of the Frontal Sinus; and K. A. Phelps, M.D., of Minneapolis, Adamantinoma Involving the Antrum. A distinguished guest of the meeting was Dr. Harold L. Lillie of Rochester, Minnesota, who is national president of the American Laryngological, Rhinological and Otological Society.

Upper Des Moines Medical Society

The Upper Des Moines Medical Society announces the following program to be presented at the Gardston Hotel in Estherville, Thursday, February 16: Heat Stroke in the Wintertime, C. D. Shope, M.D., of Terril; Osteoporosis following Fracture, C. C. Jones, M.D., of Spencer; and An Evaluation of Typing and Serum in the Treatment of Pneumonia, M. T. Morton, M.D., of Estherville. Officers of the society are: Dr. C. C. Collester of Spencer, president; Dr. H. Robert Powers of Emmetsburg, vice president, and Dr. Ruth F. Wolcott of Spirit Lake, secretary and treasurer.

PERSONAL MENTION

Dr. Thomas A. Burcham of Des Moines announces the association of Dr. Allan B. Phillips with him in the practice of his specialty, radiology. Dr. Phillips was graduated in 1935 from Washington University School of Medicine, St. Louis, and comes to Des Moines direct from St. Louis, where he has been connected with the Barnes Hospital.

Dr. Earl S. Burch, who has been associated with Dr. E. F. Beeh in Fort Dodge for the past six months, has moved to Dayton where he will open offices. Dr. Burch was graduated in 1937 from Washington University School of Medicine, St. Louis, and completed his interneship at St. Louis City Hospital.

Dr. Julian D. Boyd of the pediatrics department of the State University of Iowa, College of Medicine, Iowa City, was guest speaker for the thirty-seventh annual meeting of the Visiting Nurses Association at Davenport, Thursday, January 12. Dr. Boyd spoke on "The Avoidance of Medical Crippling in Children."

Dr. George S. Kuntz, who was graduated in 1936 from the State University of Iowa, College of Medicine, Iowa City, has located in Sibley, where he will be associated with Dr. Frank P. Winkler. Dr. Kuntz interned at Emanuel Hospital in Portland, Oregon, and for the past year has been resident physician at St. Luke's Hospital in San Francisco.

Dr. John B. Dressler, after practicing for several months in Storm Lake, has left that locality and moved to Ida Grove, where he will continue in the general practice of medicine and surgery. He is a graduate of the University of Nebraska, College of Medicine, and completed his interneship at the University Hospital in Omaha.

MARRIAGES

The marriage of Miss Sarah Whittinghill of Farmington, Michigan, and Dr. C. L. Samuelson of Paullina, Iowa, took place Saturday, January 14, in the Christian Church in Hazard, Kentucky, the home of the bride's parents. Mrs. Samuelson has been head dietitian in the Children's Hospital in Farmington, Michigan, for the past two years. After the wedding trip the couple will return to Paullina, where Dr. Samuelson has been practicing medicine for the past several months.

DEATH NOTICES

Bamford, Elmer Ellsworth, of Centerville, aged seventy-two, died January 6 as a result of a paralytic stroke which he suffered three years ago. He was graduated in 1890 from the College of Physicians and Surgeons, Keokuk, and in 1893 from Rush Medical College, University of Chicago. He had long been a member of the Appanoose County Medical Society.

Johnson, Mark Edward, of Corning, aged seventy-seven, died suddenly January 9 of coronary occlusion. He was graduated in 1895 from Jefferson Medical College of Philadelphia, and at the time of his death was a member of the Adams County Medical Society.

Larsen, William Wallace, of Le Mars, aged fifty-five, died January 20, of sarcoma. He was graduated in 1913 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Plymouth County Medical Society.

Patterson, James Carroll, of Marengo, aged fifty-eight, died in an Iowa City hospital January 18 of pneumonia. He was graduated in 1910 from Creighton University School of Medicine, Omaha, and at the time of his death was a member of the Iowa County Medical Society.

IOWA TUBERCULOSIS ASSOCIATION ANNUAL MEETING

The following tentative program has been arranged for medical sessions of the annual meeting of the Iowa Tuberculosis Association, to be held at the Fort Des Moines Hotel in Des Moines, Friday, March 10.

Morning Session

N. Boyd Anderson, M.D., Des Moines
"Surgical Treatment of Tuberculosis"
John Russell, M.D., Des Moines
"Pneumoperitoneum"
C. K. McCarthy, M.D., Des Moines
"The Cooperative Case-Finding Program"
James A. Downing, M.D., Des Moines
"Use of the Bronchoscope in Diseases of the Chest"
Ira D. Nelson, M.D., Toledo
Films of Indian Children

The noon luncheon will be addressed by Horton Casparis, M.D., of Vanderbilt University, Nashville, Tennessee, and the afternoon session will open with a panel discussion conducted by Dr. Casparis.

Afternoon Session

John C. Parsons, M.D., Des Moines
"Blood Findings in Tuberculosis"
I. H. Borts, M.D., Iowa City
"Sputum Determinations in Tuberculosis"
Lee F. Hill, M.D., Des Moines
"Significance of the Primary Infection"

NORTHWEST MEDICAL CONFERENCE

The following program has been announced for the Northwest Medical Conference which will hold its regular annual meeting in Chicago, Sunday, February 12, with headquarters at the Palmer House.

Morning Session

A Statewide Hospitalization Plan for the Low Income Group
Major C. Seelig, M.D., St. Louis, Missouri
Pennsylvania's Public Assistance Program for the Medically Indigent
Walter F. Donaldson, M.D., Pittsburgh, Pennsylvania.
Middletown Modernizes Medicine
Donald A. Covalt, M.D., Muncie, Indiana
The Physician's Rôle in a Public Health Program
Theodore R. Meyer, M.D., Clayton, Missouri

Afternoon Session

The National Health Conference
Henry A. Luce, M.D., Detroit, Michigan
Survey on the Need and Supply of Medical and Hospital Care
William F. Braasch, M.D., Rochester, Minnesota
Supplementary Arrangements for Medical Care
R. G. Leland, M.D., Chicago, Illinois
Kansas Can Control Cultists
Mr. Clarence G. Munns, Topeka, Kansas

The Missouri State Medical Association will be hosts at a one o'clock luncheon, after which the business session of the organization and election of officers will be held. Officers for 1939 are Dr. Carl F. Vohs of St. Louis, Missouri, president; and Dr. L. Fernold Foster of Bay City, Michigan, secretary.

COMING MEETINGS

Because we feel that many of the members of the Iowa State Medical Society may be interested in a number of national and special meetings, we are herewith publishing a calendar of the aproaching sessions. More detailed information may be secured from the JOURNAL office.

American College of Physicians, March 27 to 31, 1939, New Orleans, Louisiana. Secretary, Mr. E. R. Loveland, 4200 Pine Street, Philadelphia, Pennsylvania.

Eighth Annual Spring Clinic, St. Joseph Clinical Society, March 28 and 29, 1939, St. Joseph, Missouri. Headquarters at Hotel Robideaux.

Eighty-eighth Annual Session, Iowa State Medical Society, April 25 to 27, 1939, Des Moines, Iowa. Secretary, Dr. Robert L. Parker, Des Moines, Iowa.

American Medical Association, May 15 to 19, 1939, St. Louis, Missouri. Secretary, Dr. Olin West, 535 North Dearborn Street, Chicago, Illinois.

American Board of Obstetrics and Gynecology. General oral, clinical and pathological examinations for all candidates (Groups A and B) will be conducted by the entire board, meeting in St. Louis, Missouri, on May 15 and 16, 1939, immediately prior to the annual meeting of the American Medical Association. Application for admission to Group A examinations must be on file in the secretary's office by March 15, 1939. Secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pennsylvania.

American Board of Ophthalmology. Examinations for 1939 are scheduled as follows: written, March 15 and August 5; oral, May 15, St. Louis, and October 6, Chicago. Applications for permission to take the written examination March 15, must be filed with the secretary not later than February 15. Secretary, Dr. John Green, 6830 Waterman Ave., St. Louis, Missouri.

Fourth Annual Postgraduate Institute of the Philadelphia County Medical Society, March 13 to 18, 1939, Bellevue-Stratford Hotel, Philadelphia, Pennsylvania. Subject, Blood Dyscrasias and Metabolic Disorders. Director, Rufus S. Reeves, M.D., Twenty-first and Spruce Streets, Philadelphia, Pennsylvania.

First American Congress on Obstetrics and Gynecology, September 11 to 15, 1939, Cleveland, Ohio. Address secretary at 650 Rush St., Chicago, Illinois.

PREVALENCE OF DISEASE

	Dec. '38	Nov. '38	Dec. '37	Most Cases Reported From
Diphtheria	46	118	27	Black Hawk, Floyd
Scarlet Fever	403	280	936	Polk, Black Hawk, Plymouth
Typhoid Fever	27	45	1	Linn
Smallpox	59	30	171	Marshall, Audubon
Measles	531	180	37	Woodbury, Sioux, Allamakee
Whooping Cough	75	108	113	Kossuth, Woodbury
Cerebrospinal Meningitis	2	1	2	Chickasaw, Polk
Chickenpox	308	208	437	Dubuque, Woodbury
Mumps	50	30	31	Winneshiek, Polk
Poliomyelitis	1	1	2	Lee
Tularemia	82	20	9	(For State)
Tuberculosis (Pulmonary)	41	57	50	(For State)
Undulant Fever	8	11	8	(For State)
Gonorrhea	150	172	183	(For State)
Syphilis	246	256	307	(For State)

History of Medicine in Iowa

Edited by the Historical Committee

Dr. Frank M. Fuller, Keokuk
Dr. John T. McClintock, Iowa City
Dr. R. T. Lenaghan, Clinton
Dr. Tom B. Throckmorton, Des Moines
Dr. Walter L. Bierring, Des Moines
Dr. William Jepson, Sioux City

The Progress of Medicine During the Past Forty Years*

John McDannell, M.D., Nashua

John McLaren Watson, familiarly known as Ian MacLaren, in his book, "Bedside the Bonnie Briar Bush," has painted a word picture of the doctor of the old school which will remain a classic for all time. That portrait may be somewhat idealized, but none can deny that in its main feature it faithfully represents the devotion to ideals which has characterized the general practitioner of the past. In the slow development of scientific medicine, the general practitioner has served his fellow men with the greatest devotion and self-sacrifice. The history of epidemics shows that he has been worthy of the highest honor. Frequently he has made contributions of the highest value to science.

In the practice of medicine today, there is much of the heritage of the past, of traditions that have been loved and respected by all, and which are essential to the very existence of the medical art. In the struggle between knowledge and ignorance, science and superstition, medicine has and must continue to lead the way, and in this crusade the general practitioner is quietly serving his community with intelligence, industry and integrity.

Making all allowance for the impossibility of seeing one's own period in a proper perspective, it still seems certain that medicine has in the past forty years increased its capacity to be a useful servant of society more than in all the tedious progress of previous recorded time. There have been a crystallization of our knowledge of essential principles of disease and an application of them in practice that have worked a revolution. This is not meant to disparage the work of medicine of earlier times. The serious efforts of medicine to meet its responsibilities are as old as history itself. From the beginning medicine has shown all human capacity for development and the meeting of its responsibilities. It has carried the basic sciences which have to do with the structure and function of the human body, and the practical arts for the control and cure of disease and injury as far as could be done with the means at its disposal and in the state of the world's knowledge.

Our whole conception of medicine has changed during the past forty years and changed for the better, although many among us have not appreciated it and have not taken advantage of it. It is a familiar saying that the Chinese maintain their medical advisor to keep them well and take something from his stipend when they fall ill. That is the modern conception and the scientific attitude, in principle at least, toward the medical profession. The man who waits to consult a physician until he is positively ill has not learned the lesson of the past forty years. The true place of the physician is guide, advisor, consultant and friend when a man is well, and before preventable illness has had a chance to fasten on him. This is the lesson we should have learned in the past forty years. To wait until there is an actual disturbance of those carefully balanced conditions which make for health, and then to ask a physician quickly and successfully to restore that balance without giving him an opportunity to prevent that lack of balance from occurring, is not quite fair to the physician and does not allow him to make use of the new knowledge which is now available for the service of humanity.

Somewhere in France there is a monument to Pasteur, and it has on it a brief inscription in French which has always seemed to me one of the most impressive and accurate inscriptions I have ever read. It may be translated freely as "To cure sometimes, to relieve often, to comfort al-

*Read before the Chickasaw County Medical Society, New Hampton, December 8, 1938.

ways." That is a fine summary of the opportunity of the physician armed with his wealth of experience and scientific knowledge. I mention Pasteur I suppose, by and large one speaks of these things cautiously, having in mind different fields of effort and different standards of judgment, but I suppose he is the greatest single benefactor the human race has ever known. Why? Because in the patient research of the laboratory he pursued the enemies of human health into the places of their origin. He studied their habits, he learned to know their enemies, and he laid before the world the results of his profound knowledge with all his marvelous power of exposition and interpretation. Pasteur and men like Lister, less famous but wonderfully serviceable to mankind, have done more for happiness in the last forty years, than any other group of men in any field of activity from ancient Greece to our present day.

The doctor of forty years ago was much different than the doctor of today. He differed primarily in the fact that he depended on his five senses and on his "horse sense" much more than he depended on glassware and machinery. The doctor of 1898, when called to see a patient usually said first, "Stick out your tongue." No one knows just why he said that, what he expected to see, or what he really learned by looking at the tongue. We do know that tongues were more quiet in those days and one could get a fairly good look at one. Then, as most of you know, the doctor of that day often did not even have our modern, common, ordinary fever thermometer. In most instances the doctor did not even try to determine the temperature with the big clumsy things. He just looked at the patient and if any part of the patient looked hotter than the rest, he would say there was fever present. Occasionally one of these doctors would have a stethoscope, but not many country doctors used that device. Methods were rough and ready. A doctor would frequently say he could "smell" typhoid fever, scarlet fever or diphtheria, and he was usually right about typhoid fever.

The obstetrician of 1898 was just a medically educated night watchman, but that has been changed, and today an obstetrician has an assistant, an anesthetist and a nurse. After the child is born it is taken to a nursery and attended by a pediatrician and a special nurse. Certainly medicine has advanced by leaps and bounds since 1898. This new system yields good results in the prevention of toxemias, eclampsia and other complications incident to childbirth. However, this new system has also increased the costs of medical care, and the vast majority of people do not realize that since modern medicine is worth a great deal more to them, it must of necessity be more expensive. Unfortunately we have not instructed our public satisfactorily in that connection.

In 1898 the eye and the microscope were the only instruments really available in vision in relationship to the diagnosis of disease. Around 1875 if a doctor wanted to examine a throat the mother would hold an oil lamp over his shoulder; he would peer down and see what he could, which was not much. Today we have the otoscope, retinoscope, laryngoscope, bronchoscope and cystoscope; in fact we have a scope for every entrance and exit of the human body, and where there is none the doctor can make one. The eye was still further extended by the development of the x-ray, which came into being about 1898. At first the x-ray was used only to note changes that had taken place in the bones, but gradually we began to supplement this aid, so that now, forty years later, the x-ray has become an indispensable and invaluable adjunct in both diagnosis and treatment.

Thus we could take up other branches of medicine and show the tremendous progress that has been made in the past forty years. Along with this progress other changes have taken place in the nature of the practice of medicine which are of the greatest importance because they have brought upon us the present effort to socialize medicine and to arrange for a uniform distribution of medical care among the people. Around 1898 one would occasionally find a partnership in the practice of medicine. Soon these partnerships became more numerous, and we find small groups of men practicing together and the appearance of clinics. People came from abroad to study America's contribution to mankind, which was the organization of work. By 1912 we already had in the United States one hundred different groups of clinics associated around a hospital or laboratory in order to provide the patient with a complete medical service. In 1898 we had less than one thousand hospitals in this country; today we have seven thousand.

In the past forty years great progress has been made in medical training. Perhaps your great-great-grandfather was a doctor, but he never went to medical school. He may have been a blacksmith who bled people and pulled teeth. Perhaps your great-grandfather was a doctor and was graduated from a Class A school in 1820. He bled and blistered and purged; this was his armamentarium. He did not know of ether or chloroform. Perhaps your grandfather was a

doctor and was graduated from a Class A school in 1855. Bacteria was unknown, his patients with appendicitis died of cramp colic and locked bowels. He did not know that tuberculosis was communicable, and he did not have a fever thermometer. Perhaps your father was a doctor and was graduated from a Class A school in 1884. Diphtheria was rampant and deadly, as was typhoid fever. He did not have vaccines for them, nor thyroid extract, adrenalin or pituitrin. Blood transfusions were unknown. Neither the x-ray nor radium had been discovered. He had no local anesthetics. He could not even take a blood pressure reading. Pathologic and clinical microscopy was in its infancy. He did not know that yellow fever was transmitted by the mosquitoes, nor had he heard of hookworm. Perhaps you, as a doctor, were graduated from a Class A school in 1900. You knew nothing of insulin, liver extract or scarlet fever serum.

Medical science has reduced the mortality rate about one per cent a year for the past forty years, and as a result 600,000 more persons are alive today than if public health conditions of 1898 had prevailed. The forces of healing have moved forward during the past forty years at a rapid gait. The insect-borne diseases, such as yellow fever, typhus fever and malaria have yielded to scientific medicine. This present century is perhaps the most remarkable in the world's history, both in the accomplishments of the past forty years, and in the promise of the coming days. Preventive medicine dreams of a time when there shall be no unnecessary suffering and no premature deaths; when the welfare of the people shall be our highest concern, and humanity and mercy shall replace greed and selfishness. Preventive medicine dreams of these things, not with the hope that we, individually, may participate in them, but with joy that we may aid their coming to those who shall live after us. When young men have visions, the dreams of old men come true.

Robert Louis Stevenson was right when he said, "There are men and classes of men that stand above the common herd; the soldier, the sailor and the shepherd not infrequently, the artist rarely, rarer still, the clergyman, the physician almost as a rule. He is the flower of our civilization, and when that stage of man is done with and only remembered to be marveled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited in the virtues of the race. Generosity he has, such as is possible to those who practice an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Herculean cheerfulness and courage. So it is that he brings air and cheerfulness into the sickroom, and often enough, but not so often as he wishes, brings healing."

What of medicine's future? Scientific prophecies are notoriously dangerous. Benjamin Brodie was announcing that a satisfactory agent for surgical anesthesia would never be found, at the very moment the ship with the news of ether was on its way to England. Samuel Gross said that surgery had reached the limit of its possibilities, and he had never removed an appendix. Similar pronouncements have recently been heard from some medical men. They seem to have a way of being uttered just when a great burst of progress is imminent. The only safe prediction is that there is no limit to the accomplishments possible.

ART TELLS HISTORY OF AMERICAN MEDICINE



"Beaumont and St. Martin"

"Beaumont and St. Martin" is the first of six large paintings in oil memorializing "Pioneers of American Medicine" which artist Dean Cornwell will complete in the next few years. Others in the series are to be: Dr. Oliver Wendell Holmes, Dr. Ephraim McDowell, Dr. Crawford W. Long, Dr. William T. G. Morton, and Major Walter Reed, and one woman, Dorothea Lynde Dix who, while not a physician, stimulated physicians to study insanity and feeble-mindedness. Arrangements to supply physicians with free, full color reproductions of "Beaumont and St. Martin" without advertising, and suitable for framing, have been made with the owners, John Wyeth and Brother, 1118 Washington Street, Philadelphia, Pennsylvania.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

CLINICAL LABORATORY METHODS AND DIAGNOSIS—By R. B. H. Gradwohl, M.D., St. Louis. Second edition. The C. V. Mosby Company, St. Louis, 1938. Price, $12.50.

INFECTIONS OF THE HAND—By Allen B. Kanavel, M.D., late professor of surgery, Northwestern University Medical School. Seventh edition, thoroughly revised. Lea and Febiger, Philadelphia, 1939. Price, $6.00.

A MANUAL OF FRACTURES AND DISLOCATIONS—By Barbara Bartlett Stimson, M.D., associate in surgery, College of Physicians and Surgeons, Columbia University. Illustrated. Lea and Febiger, Philadelphia, 1939. Price, $2.75.

MEDICINE IN THE OUTPATIENT DEPARTMENT—By Winthrop Wetherbee, Jr., M.D., junior visiting physician, Boston City Hospital. Paul B. Hoeber, Inc., New York, 1938. Price, $1.00.

OUR COMMON AILMENT—By Harold Aaron, M.D., medical consultant to Consumers Union of United States. Dodge Publishing Company, 116 East 16th Street, New York, 1938. Price, $1.50.

PHYSICAL DIAGNOSIS—By Richard C. Cabot, M.D., professor of clinical medicine emeritus, Harvard University; and F. Dennette Adams, M.D., Harvard Medical School. Twelfth edition. William Wood and Company, Baltimore, 1938. Price, $5.00.

SCARLET FEVER—By George F. Dick, M.D., professor of medicine, University of Chicago; and Gladys Henry Dick, M.D. The Year Book Publishers, Chicago, 1938.

SUPERFLUOUS HAIR AND ITS REMOVAL—By A. F. Niemoeller, A.B., M.A., B.S., with a foreword by M. H. Marton, M.D. Harvest House, New York, 1938. Price, $2.00.

SURGERY OF ORAL AND FACIAL DISEASES AND MALFORMATIONS—By George van Ingen Brown, M.D., emeritus professor of plastic surgery, University of Wisconsin. Fourth edition. Lea and Febiger, Philadelphia, 1938. Price, $10.00.

SURGICAL PATHOLOGY OF THE DISEASES OF THE MOUTH AND JAWS—By Arthur E. Hertzler, M.D., professor of surgery, University of Kansas. J. B. Lippincott Company, Philadelphia and London, 1938. Price, $5.00.

TRAUMA AND INTERNAL DISEASE—By Frank W. Spicer, M.D. Illustrated. J. B. Lippincott Company, Philadelphia and London, 1939. Price, $7.00.

THE TREATMENT OF FRACTURES—By Charles Locke Scudder, M.D., formerly assistant professor of surgery, Harvard Medical School. Eleventh edition, revised. W. B. Saunders Company, Philadelphia and London, 1938. Price, $12.00.

BOOK REVIEWS

ANUS, RECTUM, SIGMOID COLON

By Harry Ellicott Bacon, M.D., assistant professor of proctology, Temple University School of Medicine, Philadelphia. J. B. Lippincott Company, Philadelphia, Montreal and London, 1938. Price $8.50.

During the last two or three years many books have appeared on diseases of the colon and rectum. This fact is proof of the growing emphasis that is being placed on these parts. Of these works this book is of inestimable value. The detail is probably its greatest drawback; however, as a reference book it has no equal. The field is well covered and the material is readily comprehended. The bibliography of this volume alone is of considerable value. Most all the recent works dealing with this subject are included.

The relationship of the rectal and anal conditions to general disease is discussed in detail as well as the various means of examination. Several newer phases of treatment are discussed. The chapter on malignancy is well presented with a great number of illustrations. C. J. P.

DRUG ADDICTS ARE HUMAN BEINGS

By Henry Smith Williams, M.D., B.S., LLD. Shaw Publishing Company, Washington, D. C., 1938. Price, $2.50.

If you believe that a "bureaucratic government has crucified 25,000 physicians," that the Harrison Drug Act was devised and enforced for the express purpose of creating a "billion dollar drug racket," that the addict is as much entitled to morphine as are users of coffee and tobacco and is no more adversely affected than they, that young woman addicts in America "enter the ranks of prostitution almost as a matter of course," that free distribution of morphine to addicts in sufficient quantities to control the craving will settle the addiction problem, then you will agree with Dr. Williams and enjoy his book and his argument. Treatment of the subject, from the red and yellow book jacket on, is highly sensational and emotional. The author is repetitious; he jumps from surmise to conclusion, and his inconsistencies are plentiful.

It is unfortunate that a writer whose efforts in other fields are highly respected should employ this method and style to damn the entire narcotic control program in his efforts to bring before the public the obvious faults of the Harrison Act. R. C. D.

A TEXTBOOK OF GYNECOLOGY

By Arthur Hale Curtis, M.D., professor of obstetrics and gynecology, Northwestern University Medical School. Third edition, reset. W. B. Saunders Company, Philadelphia and London, 1938. Price, $7.00.

Because of exceptional merit the first and second editions of this text were very well received by the profession. This new edition is an outstanding work and worthy of wholehearted acceptance. It is now a complete treatise on the field of gynecology and is characterized by clarity and conciseness, without omission of detail.

Eight entirely new chapters have been added covering anatomy, physiology and endocrinology. The very thorough chapter on anatomy emphasizes clinical application and includes the embryology of the generative tract. The section on the endocrines presents the subject in a clear, concise way, bringing

out the latest knowledge and approved therapeutic measures. The material covered in the previous editions has been rewritten with the introduction of new methods worthy of presentation, an example being the uses of sulfanilamide in gynecology. The author's excellent correlation of physiology, pathology, diagnosis and treatment is a boon to the reader. Other chapters particularly noteworthy are those dealing with cancer, sterility and radiotherapy. The gynecologic aspect of other fields is well presented and the entire book is unusually well illustrated.

This text will be of untold value to student and practitioner alike, both specialist and general. The reviewer feels it is indeed an outstanding work.

R. W. S.

CRIPPLED CHILDREN: THEIR TREATMENT AND ORTHOPEDIC NURSING

By Earl D. McBride, M.D., assistant professor of orthopedic surgery, University of Oklahoma, School of Medicine. Second edition. The C. V. Mosby Company, St. Louis, 1937. Price, $3.50.

The authors have revised much of the material which appeared in the first edition. In doing this, many chapters which were formerly in outline form, have been completed.

The book was written primarily as a textbook of orthopedic nursing, and it fulfills this requirement very well, giving in a comprehensive yet concise form, the information necessary for a basic knowledge of orthopedic technic and the various lesions found in the crippled child.

The specialist, as well as the physician in general practice, will find it to be a valuable reference book.

L. M. O.

APPLIED ANATOMY: FUNCTIONAL AND TOPOGRAPHICAL

By Robert H. Miller, M.D., associate professor of anatomy in the University of Tennessee, College of Medicine, Memphis, Tennessee. Lea and Febiger, Philadelphia, 1938. Price, $6.50.

In the preface to this work the author states that, "The effort has been made to clothe the skeleton with living parts, to put it in the erect posture, and to set it in motion." To obtain his objective he has enlisted the aid of comparative anatomy, phylogeny, morphology, and physiology in a commendable, if not wholly complete, manner. It is manifestly impossible to explore all the possibilities of so ambitious a project in 484 pages of textual material. Accordingly only the "high spots" are touched upon. This lends charm to the work, however, since it imparts a free flowing style and makes for easy reading.

Chapters deal with the skin, muscles, upper extremity, head and neck, vertebral column (including spinal cord and autonomic nervous system), thorax, abdomen and pelvis, and, lastly, lower extremity. These are freely interspersed with interesting and instructive information derived from the above mentioned sources. The paucity of embryologic material is to be regretted. A representative bibliography, which should encourage collateral reading, closes each chapter. Illustrations other than those obtained from standard sources are of rather poor quality. It is unfortunate that typographic errors and errors of omission at times deprive the work of that clarity and ring of authenticity which is the soul of any anatomic treatise.

The work is not intended to be a surgical anatomy and should not be confused with such. It is recommended to those who wish a ready reference to abundant and diverse, if not always practical, information bearing on functional and dynamic anatomy.

E. W. S.

SURGICAL PATHOLOGY

By William Boyd, M.D., professor of pathology, University of Toronto, fourth edition, thoroughly revised. W. B. Saunders Company, Philadelphia and London, 1938. Price, $10.00.

The title of this work indicates its scope. It is definitely not a treatise on general pathology. The author has limited the subject matter insofar as possible to concrete descriptions of the various pathologic processes as they affect specific tissues and organs, with special emphasis on those conditions that confront the surgeon. Abstract discussion of the various pathologic processes *per se* is held to a minimum.

The first eleven chapters (about 20 per cent of the book) are general discussions of inflammation and repair, gangrene, the more common surgical infections, tumors and cysts. There is a short but valuable chapter on vaccines, sera, blood transfusion and the collection of pathologic material. The remainder of the book (about 80 per cent) is given over to special pathology of specific tissues and organs. This special pathology is limited to surgical conditions. Each subject is preceded by a concise description of the normal anatomy and histology of the organ or tissue involved and, when necessary for clarity, with a short discussion of its physiology. Following this the author sets forth the method by which the pathologic process produces the final lesion. Finally there appears a description of the gross and microscopic appearance of the lesion, and the manner in which the normal physiology of the tissue or organ is altered by the lesion. The book is well written and the literary style is pleasing. Illustrations are ample in number and clarity.

The author has endeavored to write a book on the pathology of the operating room as it confronts the surgeon, and in this he has succeeded. It is an excellent work within its limited field. It is not a text for the medical student, but it is highly recommended to the operating surgeon.

F. H. B.

PATHOLOGICAL TECHNIQUE

By Frank B. Mallory, M.D., consulting pathologist to the Boston City Hospital. W. B. Saunders Company, Philadelphia and London, 1938. Price, $4.50.

Those who have known Mallory and Wright's "Pathological Technique," and have considered it their "tissue Bible," will be interested in this smaller volume with the same title, done by Dr. Frank B. Mallory.

The book, though smaller than the older volumes, still contains 434 pages. It is printed on good paper, has a few illustrations, and is arranged essentially like the older books. The preface states that the book is "the result of many requests for a modern presentation of pathological techniques," and that the best of the old methods have been retained, and the most promising of the newer ones included.

The volume is divided into three parts; Part I, ten chapters on general materials and histologic methods; Part II, five chapters on special histologic methods; and Part III, four chapters on autopsy methods. The book is clearly written, and is as pleasant as a book of this sort can be. In several places one feels, because of the sincerity of statement, that he has met the author face to face. The knowledge that Dr. Mallory is a master technician adds import to his statements.

As the former volumes by Mallory and Wright found a place in every pathologic laboratory, so we predict this new volume by Mallory will also find welcome. A. T. A. G.

THE SURGICAL TREATMENT OF HYPERTENSION

By George Crile, M.D. W. B. Saunders Company, Philadelphia and London, 1938. Price, $4.00.

This recent monograph contains many new and interesting ideas. The subject of hypertension and its various types is considered from many standpoints, especially in regard to the etiology. Supporting evidence extending through various races and species of animals is offered for a neuropathologic cause.

The types of hypertension, the differential diagnosis, and the associated pathologic conditions receive illuminating consideration. Various surgical procedures therapeutically applied to hypertension and their individual merits are discussed. A thorough explanation is given of the technic of celiac ganglionectomy and denervation of the aortic plexus. Illustrated cases are supplied, and the end results of this operative procedure lend support to the author's feeling that the operation has a definite place in the treatment of hypertension.

The many interesting ideas and thoughts contained in the volume stimulate the reader and make him realize that this monograph supplies an important subject with a long needed clear and concise volume necessary to this particular branch of surgery. Because of the high incidence of hypertension this work is of great value to all practicing physicians whether they be surgeons, internists, neurosurgeons or general practitioners. J. B. P.

THE 1938 YEAR BOOK OF PHYSICAL THERAPY

By Richard Kovács, M.D., clinical professor and director of physical therapy, New York Polyclinic Medical School and Hospital. The Year Book Publishers, Chicago, 1938. Price, $2.50.

This book is divided into two sections; the first section takes over the description of the various types of equipment and methods which are used in physical therapy; the second portion contains a discussion on how the equipment and methods of physical therapy are utilized in a great number of diseases or body conditions.

The first section goes into detail on how the equipment is made and how it should be used. It also discusses the dosage and how the equipment should be applied, the results or benefits to be expected, and the dangers of the improper use of certain equipment and methods of physical treatments. The second section enumerates a large number of diseases and conditions, individually describing how they may be helped by the various means of physical therapy. Included in this section are many illustrations showing how the method or equipment should be applied.

In opposition to the general idea that only orthopedic cases and fractures are benefited by physical therapy, this book discusses its use in a great many other fields of medicine. For a book giving a brief outline of the benefits in this field, the volume is well worth the price. D. C. W.

FEMININE HYGIENE IN MARRIAGE

By A. F. Niemoeller, A.B., M.A., B.S. With a foreword by Winfield Scott Pugh, M.D. Harvest House, 70 Fifth Avenue, New York, 1938. Price, $2.00.

The author defines hygiene as "The art or science of preservation of health," and proceeds in simple language to apply this definition to all the phases of female physiology.

The chapters on anatomy and the mechanism of menstruation are easily comprehensible to the layman. The conditions underlying minor disturbances of this function are clearly explained, and warning signs and symptoms of serious pathology are enumerated. Vaginal disorders and hygienic methods are adequately discussed. Venereal disease, and the hygiene of marriage and pregnancy are subjects which the author has presented in such a way as to be both acceptable and instructive to those not in the medical profession. The section on woman's change of life dispels much of hearsay, and explains what may be expected and why.

This work is a well written, easily understandable book, explaining the intimate problems confronting women. It is worthy of recommendation to women of all ages. R. W. S.

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USEFUL ANESTHETIC METHODS AND A SYSTEM OF TRANSFUSION OF BLOOD FOR USE IN GENERAL PRACTICE

R. Charles Adams, M.D.,

Section on Anesthesia, The Mayo Clinic, Rochester, Minnesota

The anesthetist of today has a diversity of interests in addition to his major field of anesthesia. Subjects which have become allied include the transfusion of blood, resuscitation, intravenous therapy, such as infusion of solutions of sodium chloride, dextrose and acacia as supportive measures, oxygen therapy and many others. Obviously these measures must be of interest to the general practitioner, for at one time or another their necessity will arise in his practice. Many new agents have been developed in recent years; some of them will prove very useful at times. Naturally, many of the methods and agents employed by the specialist in anesthesia will be neither suitable nor advisable for use in general practice, and I shall consider chiefly those which can be usefully employed.

INHALATION ANESTHESIA

The safest agent for inhalation anesthesia for general use is still ethyl ether. Although several undesirable features may be mentioned in connection with its use in the office, it is most valuable in the home when nursing care of the patient is available. Divinyl ether is more pleasant for the patient, but because it is more potent than ether, it is more dangerous to use in the home or office. The gaseous agents most widely used today are nitrous oxide, ethylene and cyclopropane. These agents require both a gas machine and someone to operate it and the difficulties involved make use of these gases impracticable in the home, unless all the facilities are readily available. If facilities are available, nitrous oxide may prove of value in the office for minor operations. It is not inflammable or explosive, and therefore, is safer to use than ethylene or cyclopropane. Cyclopropane, which is rapidly displacing ethylene in many centers, is more potent than ethylene, more oxygen can be used with it, and more relaxation can be produced without the addition of ether. It is administered from a gas machine which is equipped with a soda lime absorber. Because of its explosiveness and potency its administration requires an experienced anesthetist.

Inhalation anesthesia is more effective and easier to bring about when an intratracheal tube of the Magill type is employed. This tube is made of soft rubber and is curved so that blind nasal intubation of a sufficiently anesthetized patient can be effected in more than 50 per cent of the cases if the nasal passages and pharynx have been sprayed previously with such a solution as ten per cent metycaine or cocaine, or five per cent butyn. By use of the tube a thoroughly patent airway is produced and respirations are quiet and effortless; moreover, the patient becomes relaxed more easily and less of the anesthetic agent is required than otherwise. When blind nasal intubation cannot be effected, or when oral intubation is preferred, the glottis is placed under direct vision. Obviously the intratracheal tube is invaluable for resuscitation of asphyxiated persons and by its use the benefit to be derived from artificial respiration is increased. Because of the benefits of such a procedure in emergency work I should like to stress the importance of the physician becoming familiar with intratracheal intubation. In asphyxia of the newborn, a small catheter in the trachea not only will serve as a means of aspirating mucus but it can be used for artificial respiration with oxygen, carbon dioxide or for direct inflation of the infant's lung by blowing through the tube.

RECTAL ANESTHESIA

Rectal anesthesia is hardly applicable for office use but in the home an olive oil and ether mixture given by rectum is useful in obstetrics. Avertin is also well known as a rectal anesthetic, but neither this nor oil and ether administered by rec-

tum has given uniformly satisfactory results, since only basal anesthesia is produced with safe dosages. If rectal anesthesia is supplemented with local anesthesia more extensive procedures can be satisfactorily performed than with rectal anesthesia alone. Rectal anesthesia often may be useful in the transportation from the office to the hospital of patients who have met with accidents, of psychotic individuals and of persons who are suffering from burns, tetanus and so on. For the same purposes, the barbiturates can be given by rectum more conveniently than, and with effect equal to, the substances mentioned earlier in this paragraph. The barbiturates can be conveniently carried in capsules and can be administered more easily and more quickly. Following the original dose of a barbiturate, smaller amounts can be given at intervals of twenty to thirty minutes until the patient is under control.

INTRAVENOUS ANESTHESIA

Intravenous anesthesia recently has come into prominence in institutional practice, but by and large, is not a suitable method of anesthesia in the home or office unless adequate equipment is available. Pentothal sodium appears to be the best agent available at present for this purpose and it is employed in five per cent solution. Like all barbiturates, it is a respiratory depressant and must never be given in doses large enough markedly to depress or arrest the respirations. Lundy's technic of intermittent injection is employed and a cotton or paper "butterfly" should be placed across the patient's mouth and nose to indicate whether respiratory function is adequate. It is absolutely essential to maintain a free airway although support of the jaw usually is all that is required. The method, while admissible for many types of operations, is unsuitable for others, and satisfactory results are obtained only by choosing cases in which suitable types of operation are to be performed. Operations of short duration, and those which do not require profound degrees of relaxation, are most suitable. The setting of fractures, dilatation and curettage, painful removal of packs and opening of abscesses are examples. Contraindications to the use of the method include cardiac or pulmonary disease, particularly if dyspnea is present, extensive abdominal surgical procedures, operations about the posterior region of the throat and any conditions in which obstruction to respiration is potential; moreover, the method should not be used if the patient is less than ten years of age. Pentothal sodium in safe doses does not adequately obliterate the pharyngeal and abdominal reflexes and hence is unsuitable for most abdominal operations and for those about the throat, such as tonsillectomy.

Intravenous anesthesia has many advantages; induction is rapid and relatively pleasant, maintenance is smooth and recovery usually is not attended by nausea, vomiting, headache, excitement or other untoward effects. In the hands of an experienced physician the method can be safely employed in the office for very short operations if means of administering oxygen and carbon dioxide are available. The duration of these operations should be five minutes or less. Induction should be slow and injection should cease when the patient stops counting. After an interval of a minute an additional one to two cubic centimeters may be given and the needle withdrawn. The injection of larger single doses is not advocated and when longer operations are to be performed there should be an additional person at the patient's head to support the jaw. At the first sign of too much depression of respiration, or if cyanosis occurs, administration should be stopped; any obstruction of the airway should be corrected; manual, artificial respiration should be given; or oxygen and carbon dioxide should be administered.

Barbiturates administered intravenously are often useful in emergency conditions but when a prompt but more prolonged effect is desired, a barbiturate of longer action than pentothal sodium is preferred; such a preparation is sodium amytal or pentobarbital sodium (nembutal). The barbiturates of longer action are useful in controlling the convulsions caused by poisons, such as strychnine, those associated with eclampsia, tetanus, acute infections, and those which may occur in the course of local or inhalation anesthesia. The injection is made slowly and intermittently until the convulsions are controlled and the patient is resting quietly. Similar injections are made if attacks occur subsequently.

REGIONAL ANESTHESIA

Local anesthesia may well be used more than it is in general practice, and with satisfaction. The solutions and equipment are easily sterilized and transported and the method has a wide margin of safety. Procaine and metycaine both give satisfactory results and to them may be added vasoconstricting agents such as epinephrine or cobefrin. The physician can obtain five cubic centimeter ampules of a 20 per cent solution of procaine or metycaine. If one of these is added to 195 cubic centimeters of physiologic saline solution, a 0.5 per cent solution results; to 95 cubic centimeters, a one per cent solution; and to 45 cubic

centimeters, a two per cent solution. The addition of a vasoconstricting substance prolongs the anesthesia and gives a drier field. One cubic centimeter of epinephrine (1:2600) is added to 200 cubic centimeters of a 0.5 per cent solution, or to 100 cubic centimeters of a one per cent solution, or to 50 cubic centimeters of a two per cent solution. All these solutions can be obtained in sterile ampules and kept, together with sterile syringes and needles, in the doctor's bag.

For infiltration of the skin and subcutaneous tissues a 0.5 per cent solution is adequate; for blocking of nerves, a one per cent solution usually is employed. Brachial plexus block produces anesthesia of the upper extremity; between 20 and 30 cubic centimeters of a two per cent solution are used. Caudal block can be used to advantage in producing anesthesia of the perineum, rectum, vagina and urethra. By injecting ten to fifteen cubic centimeters of a one per cent solution of procaine or of metycaine just mesial to the ischial tuberosities of an obstetric patient who is in the lithotomy position, anesthesia of the anterior half of the perineum will result and will aid in instrumental delivery and in episiotomy. Paravertebral block is useful in thoracic surgery and deep and superficial cervical block, for procedures about the neck. Most fractures can be reduced painlessly by injecting ten to twenty cubic centimeters of a two per cent solution of one of these local anesthetic agents into the hematoma surrounding the fragments. When the local anesthetic procedure is to be more extensive, or if patients are nervous and apprehensive, suitable preliminary medication should be employed. One-sixth grain (0.01 gm.) of morphine sulphate, 1/150 grain (0.0004 gm.) of atropine sulphate, and 1½ grains to 3 grains (0.1 to 0.2 gm.) of pentobarbital sodium, given before the anesthetic is administered will place the patient in a semiconscious state and the anesthetic procedure will occasion little discomfort.

For spinal anesthesia procaine or metycaine may be used, but since metycaine is about ten to fifteen per cent more potent than procaine, the dose of metycaine should be correspondingly less. Although spinal anesthesia is reserved usually for institutional use, it can be used to advantage in the home. Minimal doses should be employed, and it should not be used if patients are debilitated or if they obviously constitute poor risks. An experienced person should be constantly present to watch for untoward effects. If the blood pressure falls to a critical level, use of ephedrine is indicated. Spinal anesthesia requires experience and fine judgment as to limitations of the method and correct application.

Intravenous Therapy and Blood Transfusion

Although intravenous therapy and blood transfusion have been confined chiefly to patients in hospital, the facilities now available for such work have made their use simple and practical in the home and office. In both emergency and non-emergency work, indications for intravenous administration of fluids or blood must frequently arise in general practice. Graduated bottles containing varying amounts of sterile solution of acacia, physiologic saline solution or solution of glucose of varying concentrations made up in physiologic saline solution can be kept in the office. Sterile tubing to fit any of these bottles and sterile needles can be kept ready for use and the whole equipment is easily transportable. Empty bottles of the same type can be used for blood. Acacia is supplied in six per cent solution and when blood is not available it will serve a similar purpose in cases of shock, unless severe anemia is present. If blood and solution of acacia are administered consecutively, they should not be allowed to mix in the apparatus, because the blood may clot. Saline solution should be administered between the acacia and the blood. When a patient has lost considerable body fluid, with accompanying loss of salt, as in cases of prolonged vomiting, starvation, or severe burn, physiologic saline solution will be valuable in its replacement. When food or fluids cannot be taken by mouth, solutions of dextrose will tide over the patient. When all the equipment is available for administration of such useful therapy, the physician is urged to take advantage of it.

Sometimes difficulties with the performance of venipuncture may act as a deterrent to the use of intravenous therapy. The most available veins are those in the cubital fossa, forearm, back of the hand, and those about the ankle and foot. When the veins do not stand out well, it will be valuable to apply moist heat to the extremities. The upper extremity should be wrapped in a warm, moist Turkish towel from the finger tips to well above the elbows, and the lower extremity from the toes to well above the knee. The towels should be covered with oiled silk or rubber sheets and the whole surrounded by hot water bottles. If these are left in place for between twenty and thirty minutes, many veins will be brought into prominence by the application of a tourniquet. The extremities should be placed in a dependent position during this time. Warm alcohol or other

antiseptic solution should be employed before venipuncture, because cold solution may cause the veins to disappear again. Needles of 18 gauge can be employed to enter large veins and needles of 20 gauge to enter smaller ones. The skin and the wall of the vein can be made completely insensitive to the needle puncture by raising a wheal with one per cent solution of procaine over the vein and depositing a small amount of the solution along the wall of the vein, followed by a light massage.

Recent advances and improvements in methods for the transfusion and the storage of blood have made the procedure applicable for use in general practice. If there is neither time nor immediate facility for grouping the blood of the donor and the recipient, the two bloods can be easily cross-matched. It would often be a valuable saver of time if a physician would have available in the community several Group IV (Moss) or universal donors who would be willing to give blood in certain emergencies. The donor's blood, whether he is a professional donor or a friend or relative of the recipient, should be subjected to a flocculation test. This is very important in the protection of the patient and it is valuable to the physician if medicolegal aspects arise. Unmodified blood given by the direct method does not seem to have any advantage over citrated blood and the direct method is often a more complicated procedure. The fact that blood can now be drawn, citrated and kept in a refrigerator over a period of days before it is used makes it possible to keep blood on hand for immediate use. When blood is to be stored this way it is labeled immediately after withdrawal, sealed in its container and kept in a refrigerator at 40 degrees Fahrenheit. It may then be given in toto or in fractional doses, but only that portion of the blood to be used should be heated. If blood is heated and then replaced in the refrigerator, there appears to be a greater tendency to coagulation. Blood can be kept in this manner for periods ranging from ten to twenty days. Eighteen grains (1.2 gm.) of sodium citrate, together with 50 cubic centimeters of physiologic saline solution, are adequate to prevent coagulation of 500 cubic centimeters of blood. When it is not convenient for the donor to go to the patient's home, the blood can be withdrawn at the office into a suitable container and can then be taken to the patient's home, warmed if necessary, attached to an intravenous tubing set and administered. Neither blood nor fluids should be administered intravenously at a rate faster than fifteen cubic centimeters per minute. By incorporating a Murphy drip apparatus in the tubing, the rate of flow can be watched and, by means of a screw clamp on the tubing, can be regulated. Statistics compiled at The Mayo Clinic have shown that the incidence of reaction to blood transfusion is increased as the rapidity of administration is increased.

BRACHIAL BLOCK ANESTHESIA*

LEO. J. MILTNER, M.D., F.A.C.S.,
Davenport, Iowa
and
C. L. CHAO, M.D.,
Peiping, China

In this clinic*, brachial block anesthesia has largely replaced general anesthesia for operations upon the lower arm, forearm and hand in patients more than sixteen years of age. Increasing experience with the method has shown that it is sufficiently reliable and safe to be practiced in a teaching clinic where the injections are made by various members of the house staff who have received relatively short instruction in the technic. In our series of 233 cases with brachial block anesthesia, there were no fatal results, and in only one case was there a complication, pneumothorax, which was directly due to needle puncture. Even this complication might have been avoided if the syringe had been attached to the needle, a point in technic which is now rigidly observed.

HISTORY

Crile was one of the earliest to anesthetize the brachial plexus, although he exposed the nerves by open operation in order to inject them directly. Hirschel, in 1911, was the first to inject the plexus through the skin without operative exposure of the nerves. He used novocain and adrenalin solution, injected by the axillary approach. In the same year, Kulenkampff described the technic for supraclavicular injections of the plexus in the region of the first rib. Kappis used the paravertebral route, but since this method was difficult and required several injections, it has not become popular. Likewise, Mulley selected a site of injection which was higher in the neck in order to minimize the danger of puncturing the pleura. Practically all subsequent reports have followed the technic of Kulenkampff, since it offers the most advantages and the fewest disadvantages. The following description of technic represents largely that of Kulenkampff but includes several of our modifications which we have found practicable.

* From the Division of Orthopedic Surgery, Department of Surgery, Peiping Union Medical College, Peiping, China.

TECHNIC

The nerves of the arm are anesthetized after they emerge from the intervertebral foramina to form the brachial plexus. Except for the two intercostobrachial nerves, the entire motor and sensory nerve supply of the arm and forearm converge together in a compact group over the first rib between the insertion of the scalenus anticus and scalenus posticus muscles and immediately posterior to the subclavian artery. (Figs. 1, 2 and 3). It has been our practice to prepare for injection 40 cubic centimeters of two per cent fresh novocain solution and to add to this eight minims of 1:1000 adrenalin solution.

The patient is given the usual preoperative sedative of morphine approximately forty-five



Fig. 1. The brachial plexus (from Cunningham's Anatomy).

minutes before the injection. Although the barbiturates have been advised by others as a prophylactic against possible reaction to the novocain, we have not used them. We have tried various positions of the head and shoulder of the patient in an attempt to find the most favorable one for injection. In many cases the sitting position was used but, like Kulenkampff, we discontinued it because of occasional fainting or nervous reaction of the patient. At the present time, we prefer to place the patient flat on his back (Fig. 4) with a small sand bag between the scapulae. The sand bag allows the shoulder to fall backward. At the same time, an assistant exerts gentle downward traction on the arm in order to depress the clavicle. The head is allowed to remain in a normal position or it may be tilted slightly to the opposite side. It is best not to tilt the head or depress the shoulder too much, because the soft structures of the neck are stretched between the clavicle and the skull, making palpation difficult. With the soft structures of the neck relaxed, the entire clavicular area is prepared with iodine and alcohol. After the region has been draped with sterile towels, the midpoint of the clavicle is located by measurement and also by the location of the external jugular vein which marks this position. The midpoint of the clavicle is almost directly above the place where the subclavian artery lies in contact with the first rib. The brachial plexus is immediately posterior to the artery. In a thin individual, it is usually very easy to feel the pulsation of the subclavian artery and also the cords of the brachial plexus. In a heavy individual, however, palpation of these structures may be difficult. If such difficulty is encountered, it is best to feel the radial pulse while pressing over

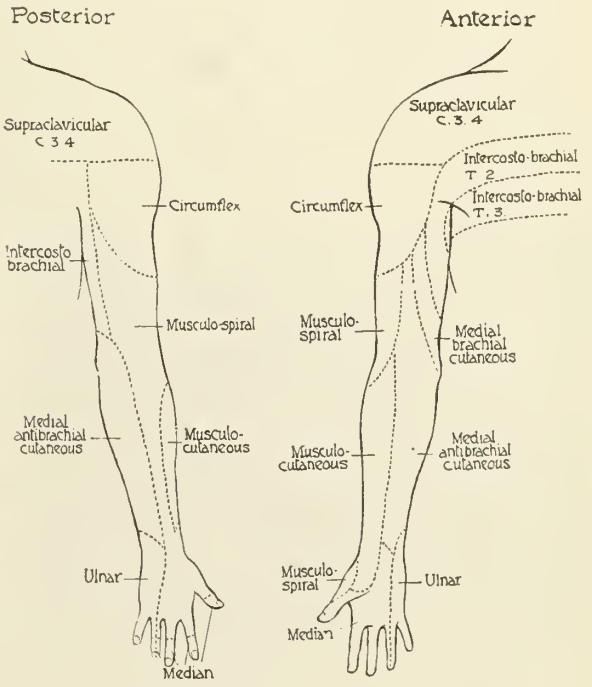


Fig. 2. Posterior and anterior views of arm and hand, showing distribution of cutaneous nerves.

the first rib on the anatomic location of the artery. Weakening or obliteration of the pulse indicates the position of the subclavian artery. When the exact location of the artery is found, a subcutaneous wheal is raised about one centimeter posterior to this point, or the injection may be made more medially or laterally in order to avoid puncturing the external jugular vein. A small caliber needle (20 gauge) with syringe applied is inserted directly down on the first rib in the region of the brachial plexus. The patient has been previously instructed to state the moment at which he feels a twinge of pain in the arm, which is an indication that the needle has struck the plexus. In order to make sure that the point of the needle is not in a vessel, suction is made on the syringe. If blood does not return through the needle, the injection is made. Approximately 20 cubic centimeters of two per cent novocain

adrenalin solution are injected slowly in this area. The point of the needle may be moved about a few millimeters to either side and up and down. During the injection, the patient frequently feels increased pain in the arm; also, the extremity feels warmer. If it is desirable to block the intercostal brachial nerves the needle may be redirected, without withdrawing it from the skin, to the region of the first and second intercostal space directly below the brachial plexus where a second injection of approximately ten to fifteen cubic centimeters of two per cent novocain adrenalin solution is made. The loose areolar tissues in this region may be filled with novocain.

In certain instances, usually because of fear of striking the subclavian artery, the first injection over the first rib is made too far posteriorly with resultant failure to obtain satisfactory anesthesia.

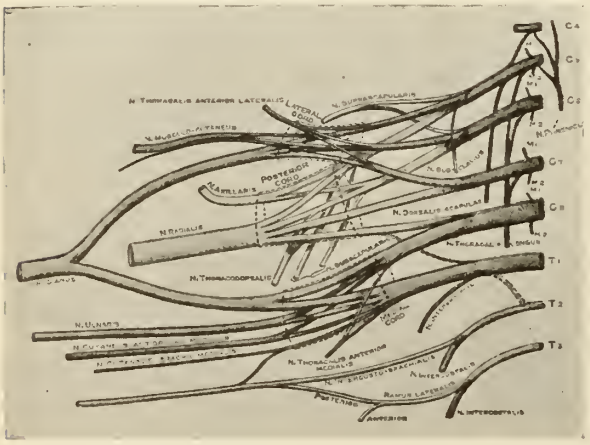


Fig. 3. Dissection of neck. The clavicle has been removed to show the anatomy in the region of the first rib. Note that the brachial plexus and the subclavian artery are immediately posterior to the scalenus anticus muscle while the subclavian vein lies anterior to it. In brachial anesthesia, the brachial plexus is injected at the point where it converges over the first rib.

Therefore, it may be necessary to direct the point of the needle gradually more forward toward the artery for a second injection. If bright blood appears in the syringe (an indication that the artery has been punctured) the needle should be withdrawn or directed more posteriorly and pressure should be made over the artery for a short time. If the correct injection is made, sensory anesthesia begins within five minutes and is complete within ten to thirty minutes. At first, the muscles show only paresis but later there may be complete motor paralysis. Sensory anesthesia is usually obtained before loss of motor function. In certain instances, the motor function may remain intact in spite of complete and satisfactory anesthesia. This situation is often very desirable when performing operations upon tendons and muscles, because it allows active cooperation and active function of the parts under reconstruction.

Area and Duration of Anesthesia. When the injection is performed correctly there is complete anesthesia of approximately three-fourths of the arm and the entire forearm and hand. Since the supraclavicular nerves from the cervical plexus supply the skin of the shoulder, and the intercostobrachial nerves supply the skin of the inner aspect of the arm and axilla, it is necessary to make a separate injection of these nerves if the region of the shoulder joint is to be operated up-

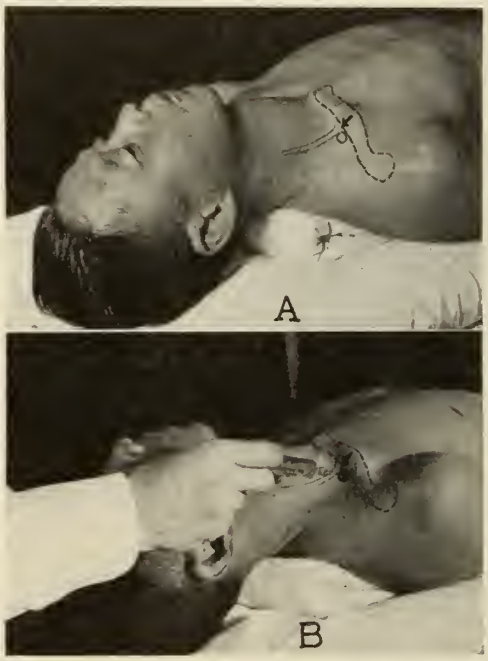


Fig. 4. Photograph A shows the position of the patient preparatory to injection. The anatomic landmarks are made with dye. The two vertical lines running perpendicular to the midpoint of the clavicle mark the location of the external jugular vein, puncture of which should be avoided. The arrow marks the position at which the pulsation of the subclavian artery was palpated. The circle immediately posterior to the arrow indicates the point of injection of novocain. Photograph B shows the insertion of the needle with syringe attached. The needle is directed downward behind the clavicle, toward the first rib.

on. In our experience, however, we have not found block anesthesia very satisfactory for major operations of the shoulder area and have limited the use of brachial block anesthesia to operations of the upper extremity below the level of the deltoid insertion of the humerus. Novocain alone has not proved satisfactory since it is carried away quickly and often does not become fixed to the large nerves of the plexus. With the addition of proper amounts of adrenalin solution, novocain affords effective block of the brachial plexus for periods varying from one and one-fourth to one and three-fourths hours, or an average of about one and one-half hours.

Secondary Effects. In brachial anesthesia by

STATISTICS

Surgical procedures in which brachial block anesthesia was used	Number of cases	Complete	Complete plus general	Partial plus local	Failure
Shoulder; Open reduction; neurolysis	2	1	..	1	..
Upper arm; Amputation; debridement; removal of foreign body; excision of tumor; open reduction for fracture; incision and drainage; sequestrectomy; partial ostectomy; neurolysis; excision of aneurysm of brachial artery; insertion of radon seeds.	50	30	10	5	5
Elbow; Debridement; removal of foreign body; sequestrectomy; resection; open reduction; arthroplasty; plastic operation; incision and drainage; arthrodesis; arthrotomy; neurolysis; skin-plasty.	47	21	20	..	6
Forearm; Amputation; debridement; removal of foreign body; sequestrectomy; partial ostectomy; open reduction for fracture; incision and drainage; excision of aneurysm.	69	49	9	5	6
Wrist and hand; Debridement; removal of foreign body; sequestrectomy; amputation; excision of tumor; plastic operation; incision and drainage; excision of tenosynovitis; partial ostectomy; resection of wrist; tendoplasty; resection of finger joint; arthrodesis of carpometacarpal joint; excision of ganglion.	65	41	6	13	5
Total	233	142	45	24	22

this method, there occurs regularly a transitory block of the phrenic nerve, with resultant paralysis of that half of the diaphragm. However, this effect is transitory and causes no inconvenience to the patient. Hartel and Keppler were the first to demonstrate by roentgen ray technic the accompanying paralysis of the phrenic nerve. Horner's syndrome—sympathetic paralysis manifested by contraction of the pupil, flushing of one-half of the face and hyperemia of the conjunctiva on the side of injection—is seen occasionally, but these symptoms disappear as the anesthesia wears off and are of no significance. Toxic reactions to the novocain may be seen but can be prevented to a large extent by the preoperative sedative. If a fine needle is used and careful technic is applied, there is little danger from accidental puncture of the subclavian artery. Likewise, there is little danger of puncturing the pleura if the syringe is at all times connected with the needle, thus preventing air from getting into the pleural cavity.

Analysis of the statistical table shows that brachial anesthesia was used for a wide variety of surgical procedures, both minor and major, which required a time varying from ten or fifteen minutes to two hours or more. The figures of the third column show that general anesthesia was used in forty-five cases as a supplement to the brachial block. In these cases, the brachial block was entirely satisfactory during the usual effective period, but due to the length of the operation, additional anesthesia was necessary. The figures of the fourth column show a total of twenty-four cases in which the anesthesia was only partially complete. In many of these cases the surgeon did not wait for a sufficient time (fifteen to thirty minutes) for the anesthesia to become complete, and, therefore, because of hurry, used either local infiltration of the skin along the line of incision, or block of the nerves of the entire local area. As shown in the fifth column there were twenty-four cases (9.4 per cent) in which brachial anesthesia was a complete failure. Although this percentage of failure is high, it is to be recalled that in most instances, the anesthetic was administered by rotating members of the house staff, who had received only short instruction in the technic of injection.

As a rule, the technic was learned quickly and the successes with the method enlarged almost proportionately with the increasing experience of the various anesthetists. Thus the percentage of failures of the various individual anesthetists decreased from fifteen to one or two per cent as the method became understood. Fear of puncturing the subclavian artery was the chief cause of the failures, since the desire to avoid the artery often caused the surgeon to inject the solution too far posteriorly. However, this fear has gradually disappeared since we have learned to agree with Kulenkampff that no harm results from striking the artery if a small caliber needle is used. We have not found a single case in which

brachial anesthesia has produced prolonged or permanent after effects on the nerve such as neuralgia, neuritis or degeneration of the nerves.

CONCLUSIONS

Brachial block anesthesia has proved to be a safe and satisfactory form of anesthesia for minor or major operations on the upper extremity distal to the middle of the humerus in patients more than sixteen years of age. When a proper amount of adrenalin is used with the novocain the duration of anesthesia is approximately one and one-half hours. No harm results from puncture of the subclavian artery if a small caliber needle (preferably 20 gauge) is used. In case of puncture of the artery the needle should be withdrawn and firm pressure exerted by a finger over the area for approximately one minute in order to prevent the development of a hematoma. The first injection of 20 cubic centimeters of two per cent novocain adrenalin solution is made into the brachial plexus where it converges over the top of the first rib immediately posterior to the subclavian artery. This injection produces anesthesia of all parts distal to the elbow joint. For operations in the region of the elbow or between the elbow and the middle of the humerus, the intercostobrachial nerves should be blocked by a second injection of ten to fifteen cubic centimeters of two per cent novocain adrenalin solution into the loose areolar tissue in the first and second intercostal spaces directly below the brachial plexus.

We believe that brachial block anesthesia is indicated particularly in patients with pulmonary disease and diabetes, and those with cardiac and renal affections. It has been of great value in plastic operations upon the tendons of the forearm and hand since the patients have been able to cooperate actively, thus allowing the surgeon to see immediately the function of the structures under vision.

The contraindications for brachial block are the same as those which exist for any other form of local anesthesia. Young, non-cooperative or nervous individuals should not be selected for this type of anesthesia.

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DIABETES AND ITS MANAGEMENT*

A Review of 366 Cases

E. B. WINNETT, M.D., F.A.C.P., Des Moines

With the thought that the study of a group of diabetic patients might be instructive for you and educational for me, not only from the standpoint of diabetes itself, but also from the complications encountered, I have arbitrarily chosen patients seen in private practice from July 1, 1937 to July 1, 1938. The group numbered 366, 186 males and 180 females, and the accurate records will disclose some interesting facts.

CLASSIFICATION

Diabetes has been variously classified. However, I have used the following classification, which is practical and serviceable from a clinical standpoint.

I. Potential Diabetes: A potential diabetic patient is one whose urine contains sugar at irregular intervals because of an irregular increase in carbohydrate intake. Blood sugar determinations in this group do not exceed 160 milligrams for venous blood, and 200 milligrams for capillary blood. Twelve of these 366 patients, or .33 per cent, fall into this group.

II. Bona fide diabetes: These patients have glycosuria and hyperglycemia with or without symptoms. On the 366 patients, 331 fell into this group. These 331 patients with diabetes were further divided into the following groups because of the varying severity of the disease. It must be understood that the severity of the disease may become greatly altered in a given patient by treatment and by the development of complications in a very short time.

A. Mild diabetes: This group requires only dietary restrictions to become sugar free and maintain a normal blood sugar content.

B. Moderate diabetes: Patients in this group must weigh their food and follow their dietary instructions closely, but need no insulin.

C. Moderate severe diabetes: These patients, likewise, must follow dietary instructions, but require less than twenty units of insulin a day.

*Presented before the Library Club, Des Moines, December 14, 1938.

D. Severe diabetes: This group comprises those patients who, when following dietary instructions, require more than twenty units of insulin a day.

III. Renal diabetes: These patients have urinary sugar constantly, regardless of their diet, but their blood sugar and sugar tolerance curves are at all times normal. In other words, the kidneys excrete sugar from the blood even when the amount of sugar in the blood is not above normal. Any of these patients with a family history of diabetes require prolonged observation to prevent the future development of diabetes.

IV. Pseudodiabetes: Into this group fall patients whose urine may contain sugar from some cause other than that present in the above groups, such as hyperthyroidism, infections, head injuries, urinary sugar other than glucose (fructose or levulose), and so-called alimentary glycosuria. Alimentary glycosuria is a condition found in non-diabetic patients when such large excesses of readily available glucose are ingested that body economy is unable to care for it all and spills some of it into the urine, in the same manner as non-diabetic patients show sugar in the urine when they are given large amounts of glucose intravenously in a short period of time. The pseudodiabetic patients in this series, excluding those frequent cases caused by intravenous glucose, numbered sixteen.

ETIOLOGY

The outstanding advance during the year in the etiology of diabetes was done by Young, working at the National Institute for Medical Research in London. Young produced permanent diabetes in dogs by injecting anterior pituitary extract intraperitoneally. The animals required insulin, and one died later in diabetic coma. This work indicated that the pituitary gland plays an even more important rôle in the production of diabetes than was formerly thought. Furthermore it should make us hesitate before giving repeated injections of pituitary hormone extract for therapeutic purposes. The possibility of a regulatory hormone for correcting the fundamental cause of diabetes may some day be a reality. The other important advance in the discovery of the etiologic factor in diabetes is the establishment by the state medical society in the state of Pennsylvania of a diabetic commission with ramifications to all county medical societies for the study and control of diabetes. This commission acts as a compilation bureau for accurate information and statistics on diabetic patients throughout the state. Such a commission in this state would serve a most useful purpose, especially if diabetes was made a reportable disease.

The series herein reported well exemplifies the strong hereditary tendency shown by statisticians. The hereditary tendency was present in 126 patients, or 34.5 per cent. This percentage would be considerably higher if it were possible to obtain accurate family histories on all patients, and if we were able to determine whether or not family members still living would develop diabetes before they die. Obesity as an etiologic factor is now established. Not infrequently fat diabetic individuals can be relieved entirely of their diabetes by weight reductions to normal or slightly below normal. Of this group, 182 showed obesity before the onset of diabetes; 102 females and 80 males. Arteriosclerosis in the etiology of diabetes was not included because I do not believe that arteriosclerosis produces diabetes. Postmortem examinations disclose no more pancreatic arteriosclerosis in the diabetic patient than in patients dying from other causes. If arteriosclerosis were a cause of diabetes, we would find it in many more arteriosclerotic individuals than we do. A study of this series bears out Joslin's statement, "With fat, diabetes begins, and with fat it ends." The majority developed diabetes after forty years of age, the period when excess weight usually makes its appearance. Can diabetes be eliminated if people will avoid obesity? Arteriosclerosis or one of the ramifications was present as a complication in most of the individuals over forty years of age, and here again fat metabolism enters into the picture. No case of true xanthoma involving the pancreas as a cause of diabetes could be demonstrated. Likewise, acromegaly and hemochromatosis were not seen. Infection as a cause of diabetes could not be demonstrated, although it was found that any infection, with the exception of tuberculosis, aggravated the diabetic condition. All nationalities were included in this group.

COMPLICATIONS

The complications of diabetes are the most serious part of the disease from a clinical standpoint. They may be divided into two general groups; first, those resulting from diabetes, such as coma and gangrene; and second, those resulting from some other cause, such as hernia, malta fever, and almost any of the ills to which man may fall heir. The old adage that "one who knows syphilis knows medicine" might well be paraphrased to read "one who knows diabetes and all its complications knows medicine." Of the 366 patients in this group, 189 gave evidence of complications at the time of examination. (See Table I.) Not all complications occurring previous to the time of examination were included. All will have complications at some future time. It is

interesting to note that 108 patients required x-ray examination as an aid in the diagnosis of complications.

TABLE I—COMPLICATIONS

Allergy	7
Coma	8
Cord Bladder	1
Diabetic Tabes	1
Fractures	8
Heart Disease	79
Hypertension	92
Insulin Atrophy	3
Insulin Lumps	12
Lues	8
Neuritis	8
Oculomotor Paralysis	1
Prostatic Hypertrophy	16
Surgery	30
(See Table II for detailed tabulation)	
Tuberculosis	8
TOTAL	282

Coma: Coma is such a frequent and often disastrous complication of diabetes that its possibility should be uppermost in the mind of every physician treating diabetes. Coma is much better avoided than treated. Of this group, coma occurred in twenty patients; twelve gave a history of coma, and eight were treated for coma. Of this number, one died. The important factor in coma is early recognition and early treatment. The rapidity with which patients pass from satisfactory progress after surgery to coma is surprising. Especially is this true when there is an associated hepatitis or poorly functioning liver. All patients in diabetic coma deserve the benefits of hospitalization. The diagnosis is difficult to make because of a borderline of ketosis, which is a carbon dioxide combining power of 20 volumes per cent or below. A patient may be in a diabetic coma, with a carbon dioxide content below 20 volumes, and the only sign may be deep or labored breathing with cyanosis. On the other hand, the patient may be partially unconscious with a much milder degree of acidosis. Impending coma is not coma. Contrary to the general belief, the amount of sugar in the urine or the height of the blood sugar curve is not an indication of the degree of ketosis. A large number of coma patients is an indication of inadequate diabetic instruction. All diabetic patients should be well schooled in the signs of impending coma and what to do for it. As mentioned before, coma should be recognized early and treated vigorously. Constant supervision of the diabetic individual in coma is necessary. Insulin should be given every thirty minutes for the first four hours or longer. This insulin should be administered intravenously if for any reason, such as edema or arteriosclerosis, it might not be readily absorbed. Another important point is to keep the patient warm. All patients in coma are dehydrated and all need from 2,000 to 5,000 cubic centimeters of normal saline solution, or normal saline solution with added glucose. Root and Riseman recently reported a patient in coma to which 11,000 cubic centimeters of fluids were given in the first seven hours. The patient did not develop edema, and recovery was prompt, although 1,000 units of insulin were necessary the first day. One of this group, a woman fifty-four years of age, received 1,070 units of insulin and 7,500 cubic centimeters of fluids in fourteen hours. This relieved the diabetic coma sufficiently for her to become conscious. She died several hours later, and postmortem examination showed marked liver damage.

Cardiovascular Disease: In considering the frequent association of diabetes and cardiovascular disease, one must remember that diabetes occurs most frequently in the decades of life when cardiovascular disease is most common. Unquestionably diabetes in itself predisposes to this condition. Of the series under discussion, 92 had hypertension; arteriosclerosis manifested itself by gangrene in eighteen cases; 79 had organic heart disease, either arteriosclerotic, coronary, or thyroid in type. None of the luetic patients showed evidence of cardiac involvement. The old teaching that a patient with coronary disease and diabetes should not have the diabetes adequately controlled with diet and insulin is fallacious. I have yet to see a diabetic patient with evidence of the effect of a hypoglycemic reaction upon the heart, either in precipitating a coronary attack, or weakening the heart muscle. In my experience, insulin reactions have occurred frequently in coronary and arteriosclerotic heart disease without any demonstrable injurious effect. The judicious use of insulin and diet in the diabetic person with heart disease is good medicine. Experience has taught me that patients suffering with heart disease and diabetes progress more favorably when their weight is kept below normal. Infection, especially of the respiratory tract, should be avoided; secondary anemia, frequently present, should receive adequate treatment. The diabetic individual can secure necessary exercise, but he must remain within his cardiac reserve. The therapy of heart disease complicating diabetes differs in no way from that indicated for the non-diabetic patient with heart disease.

Surgery: The frequent complication of surgery in diabetes is well recognized. Among the 366 patients in this series, major surgical operations were performed on thirty, or approximately ten per cent. Thirty-six, or an additional ten per cent, had undergone operations previously. The additional number of this group who will require operation at some future time before they die will bring the total to approximately fifty per cent or more. Many of these surgical cases are included in Priestley's recent report and, therefore, will not

be considered in detail again. Because of the relative frequency of operations in diabetic patients, a thorough knowledge of the correct preparation is essential. This entails careful regulation with suitable fluids, diet and insulin when necessary. The importance of sufficient fluid in these patients, who often are markedly dehydrated, cannot be overestimated. Much of the surgery on the diabetic individual is preventable by proper care and control of the diabetes. Each patient should have a thorough physical examination with the indicated laboratory work to exclude other conditions which may have a direct bearing on the diabetes, such as infections and other complications. A common hidden source of infection is not infrequently unearthed in the urinary tract. Three of the patients operated upon died. In each instance the death was partially the result of belated surgery. One patient had a very severe hyperthyroidism with much myocardial damage, and was subjected only to a graded procedure rather than a bilateral subtotal thyroidectomy. The second death occurred in a patient with biliary tract disease of long standing whose liver had undergone considerable change. Diabetes unquestionably increased the risk in both of these patients, but both would have been higher than average risks if they had not had diabetes. The third death occurred in a case of gangrene of the foot with marked sepsis. Operation was refused until considerable systemic infection had taken place. Not infrequently we encounter these patients who will not recognize the emergency nature of gangrene. Diabetes can seldom be considered a contraindication to necessary surgery. However, the internist must have a thorough knowledge of this subject before he can hope successfully to carry patients through surgical procedures.

TABLE II—TYPES OF OPERATIONS PERFORMED ON DIABETIC PATIENTS

Amputations	6
Leg	5
Toe	1
Appendectomy	3
Breast	1
Cancer of the Neck	2
Cataract	2
Fractures of the Hip	3
Gallbladder	1
Hemorrhoids	1
Hernia	1
Hysterectomy	2
Intestinal Obstruction	1
Nephrectomy	1
Prostatic Resection	1
Thyroidectomy	4
Uterine Fixation	1
TOTAL	30

Tuberculosis: Pulmonary tuberculosis as a complication of diabetes was evidenced in eight of the group. Tuberculosis as a cause of death was not found, although in two deaths following surgery, an old healed process involving in both instances the left apex was reported at the postmortem examination. Untreated or poorly treated diabetic patients are prone to develop tuberculosis. The diagnosis is made as it is in the nondiabetic patient, and the clinical signs are the same, except that emaciation is more marked. The x-ray is of great value in the early recognition, but the physician must not rely on the x-ray alone. An interesting case illustrating this complication was that of a white female, thirty-nine years of age, who entered the hospital to change from unmodified insulin to protamine zinc insulin. The history revealed diabetes of nine years' duration and a productive cough of four months' duration, with frequent colds and cough for years. The x-ray examination revealed a general fibrosis associated with moderate calcification of the hilus glands and no localized parenchymatous changes in either lung. Many tubercule bacilli were found in the sputum. She was regulated on protamine zinc insulin, thirty-five units, and regular insulin, seven units, both before breakfast. Her diet consisted of carbohydrate, 150; protein, 70; and fat, 125. The presence of tuberculosis in the diabetic patient alters the treatment in certain respects. In the active stage emphasis should be placed on rest rather than exercise. The diet should contain more protein and have a caloric value in excess of that necessary to maintain nutrition. Better diabetic control can be obtained by using a combination of both protamine zinc insulin and regular insulin. Prior to the discovery and use of insulin, diabetes complicated by tuberculosis, usually meant death. With the use of insulin, and especially protamine zinc insulin, with a cooperative patient and early diagnosis, there seems to be no difference between diabetes and tuberculosis, or tuberculosis and no diabetes.

Neurologic Complications: The neurologic complications of diabetes seldom receive sufficient attention either in diagnosis or treatment. Of the 366 patients comprising this study, eleven showed some organic nervous disorder. In other words, one in every thirty-five diabetic patients showed nervous disease. Neuritis appeared most frequently with eight instances, all of which were rather severe and difficult to treat satisfactorily. Vitamin therapy proved a useful adjunct in certain instances. Other nervous manifestations included diabetic tabes with cord bladder, cord bladder, and oculomotor paralysis.

DIABETIC CHILDREN

Diabetic children are usually a pleasure to treat because they quickly grasp their instructions and are generally mentally precocious. Twenty-nine children under sixteen years of age were seen in

this series. Certain failures characterize the management of the diabetic child. In the first place, coma is more frequent and develops with greater rapidity. Nine, or 36 per cent, were seen in coma



Fig. 1. Photograph of diabetic boy twelve years of age on left and that of diabetic dwarf ten years of age on right. Notice small stature of the dwarf.

or had developed coma at some time. However, the power to recuperate from coma is much greater in children than in adults. None of these patients died in coma. In the second place, diabetes is generally more severe in children as evidenced by the fact that all bona fide diabetes in children required insulin. None of this group could be regulated on diet alone. Of the group, fifteen were regulated with unmodified insulin, five on protamine zinc insulin alone, and five with combined regular insulin and protamine zinc insulin (before breakfast). Four required no insulin. All real diabetic children require insulin as evidenced by twenty-five of this group. Of the four who did not, one had potential diabetes, one had renal diabetes, and two were unclassified. Three were classified as diabetic dwarfs, and five were thought to have some endocrine dysfunction, probably pituitary in nature. (See Fig. 1.) Four underwent major surgical procedures. After adequate treatment, it was found that the girls menstruated normally, and the boys developed normally from a sex standpoint.

INSULIN ADMINISTRATION

Seven of the group were allergic to insulin. Local reactions with an area of hyperemia about the site of injection occurred in many. In one patient, a girl eleven years of age, local abscesses formed where insulin was injected. Each small abscess was opened and pus with serum was drained. A change from the arms to the legs or abdomen made no difference. Insulin could not be omitted and a great deal of disfigurement resulted. After two months she was able to inject the insulin without abscess formation. I am sure the trouble was not due to lack of sterilization of the skin, needle or any other paraphenalia. Tumefaction and insulin lumps were found in twelve. The condition resulted from injecting insulin too many times in the same place. All were repeatedly instructed never to give insulin twice in the same location during a month, and charts were kept at the hospital to prevent nurses from so doing. Lipodystrophy occurred in three patients. (See Fig. 2.) This condition results from the



Fig. 2. Photograph of lipodystrophy. Note the depressed area in the outer mid-thigh region.

disappearance of the subcutaneous fat. It may occur any place on the body, usually the arms and legs, but not always at the site of injection. The etiology is unknown and the condition is harmless except for the disfigurement it produces.

CONCLUSIONS

1. A report and analysis is made on 366 consecutive diabetic patients seen in private practice from July 1, 1937 to July 1, 1938.

2. The high incidence and varied nature of complications are indicated; 189 patients showed 282 complications.

3. Major surgery was performed on thirty patients with three fatalities.

4. In 306 adults with bona fide diabetes, coma

had occurred or was treated in eleven instances, or 3.3 per cent. In twenty-five children with bona fide diabetes, coma had occurred or was treated in nine instances, or 36 per cent.

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THE PROTHROMBIN TEST AND THE VITAMIN K TREATMENT FOR THE BLEEDING TENDENCY IN THE JAUNDICED PATIENT

Paul F. Olson, M.D., Dubuque

One of the major difficulties in surgery of the biliary tract has been the lack of dependable means to prevent the occurrence of severe and often fatal hemorrhages following operation on jaundiced patients. Until recently we have had no means of determining which patients harbor this bleeding tendency, and there has been no certain and satisfactory method of treating the hemorrhages when they occur. Now almost simultaneously we have been provided both with a method for determining whether the jaundiced patient under consideration is one who is likely to have postoperative hemorrhage and with a preventive, as well as active, treatment for the hemorrhage.

It has long been appreciated that the bleeding tendency in jaundice defies the usual tests for clotting deficiency. The tests for clotting time or bleeding time ordinarily applied to "bleeders" regularly gave normal readings in jaundiced patients who subsequently had fatal postoperative hemorrhages. Special tests had been devised without satisfactory results until Quick* demonstrated that a deficiency in the prothrombin content of the blood of the jaundiced patient makes him susceptible to uncontrollable postoperative hemorrhage. Quick has made available a quantitative test for the prothrombin bleeding time which provides desirable information as to whether the jaundiced patient is one who is likely to have a severe and possibly fatal postoperative complication in the form of hemorrhage. It is true that many of the jaundiced patients do not bleed postoperatively and can be operated upon with impunity so far as this complication is concerned. However, until Quick devised his test, there was no way of identifying the bleeders, and the surgeon approached each jaundice case with trepidation.

Quick has been able to control the other variable factors in the coagulability of the blood and so can determine quantitatively the deficiency in prothrombin in a test for the prothrombin bleeding time. A prothrombin bleeding time of twenty to thirty seconds is normal. A prothrombin bleeding time of over forty-five seconds signifies that a hemorrhage may occur. The highest prothrombin bleeding time recorded in the literature is one of four hundred seconds, ascertained in a test of blood taken from a patient who succumbed to hemorrhage. Any prothrombin bleeding time higher than one hundred seconds signifies that the patient is in imminent danger of a serious hemorrhage. The prothrombin bleeding times of the case which we are reporting are given in a subsequent chart.

Many therapeutic measures have been undertaken in an attempt to control the postoperative hemorrhages in the jaundiced patient. Of these the administration of glucose intravenously, the administration of bile or bile salts into the intestinal tract, and the transfusion of blood have been the most effective. They have, however, fallen far short of being satisfactory. Glucose aids the damaged liver; but a liver whose outlet is obstructed is not well able to utilize glucose, and some jaundiced patients are not able to tolerate consequential amounts. Replacement of bile or bile salts into the intestinal tract overcomes to some extent the deficiency which exists in this respect, but that this deficiency is not the only factor present in the bleeding tendency of jaundice is evidenced by the fact that patients with bile fistulas without jaundice are not so susceptible to hemorrhage as are the patients suffering from obstructive jaundice. Transfusion has been the greatest aid in the treatment of bleeding in the jaundiced patient, but its benefit is transient. Transfusion not only replaces the lost blood but supplies the deficient element (prothrombin) for clotting. A hemorrhage may stop, as the result of a transfusion, only to start up again in a few hours or in a day or two.

After the obstruction to the common duct has been released by operation, and a free flow of bile into the intestines has again been effected, the patient is on his way to recovery. An interval exists, however, between the operation and such time as the patient is able to utilize the benefits of the operation; and during this interval, unhappily, the patient may lose his life as a result of hemorrhage. The bile elaborated by a badly damaged liver is deficient in bile salts, and may at times be reduced to as low as ten per cent of the normal concentration. It is also some time after the operation before the patient is able to consume and utilize food.

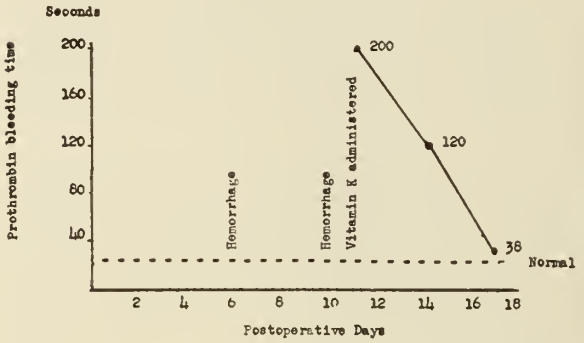
* Quick, A. J.: The nature of bleeding in jaundice. Jour. Amer. Med. Assn., cx:1658-1662 (May 14) 1938.

The administration of the so-called Vitamin K, together with bile salts administered both pre- and postoperatively, aids greatly in carrying the patient over the dangerous interval until he is able to benefit from the operative release of the obstruction which caused the jaundice.

Vitamin K, or the "koagulations vitamine," was discovered by Danish investigators to be the lacking accessory dietary factor in the hemorrhagic diathesis in chicks suffering from dietary deficiency. The exact chemical nature of this vitamin has not as yet been determined. It is present in adequate quantities in a balanced diet, but being a fat soluble vitamin it is not well absorbed from an intestinal tract in which bile is lacking. Vitamin K can be abstracted from several sources, the best of which at present is alfalfa. It can also be concentrated so as to be administered to the patient in small yet adequate dosage. Its administration is accompanied by the feeding of bile salt tablets in order to enhance its absorption and utilization. Vitamin K has no demonstrable value in decreasing abnormal bleeding tendencies in the human other than that which results from jaundice. In controlling the bleeding tendency of jaundice it bids fair to do much in the solution of the problem involved in this serious surgical complication, as is evidenced by the following case report.

CASE REPORT

The patient had been intermittently jaundiced for five months and apparently completely jaundiced for three months. When first seen her icterus index was 150, her urine loaded with bile, and her stools clay-colored. A diagnosis of obstruction in the common duct was made. Preoperatively she was given intravenous glucose and a blood transfusion. At operation on November 18 a diverticulum of the common duct was encountered and a calcareous obstruction at the ampulla of Vater relieved. The duct was closed over a T-tube, from which bile promptly flowed. Unusual bleeding was encountered at the time of operation and oozing occurred for several days after the operation. Six days after operation a severe hemorrhage occurred. This was controlled by a blood transfusion, but the oozing recurred, and four days later another serious hemorrhage requiring transfusion again occurred. A prothrombin bleeding time after the method of Quick was two hundred seconds. Vitamin K (which at that time was only available experimentally, but is now on the market) was given, two capsules being administered orally three times a day after meals. Each capsule was accompanied by a five-grain tablet of bile salts. The prothrombin bleeding time was determined three days later and found to be one hundred and twenty seconds. No further hemorrhage had occurred and the oozing from the wound was decreasing. Seven days after the administration of Vitamin K was instituted, the prothrombin bleeding time was reduced to thirty-eight seconds, which was comparable to a normal control, and all bleeding had stopped. The convalescence henceforth was uneventful.



DISCUSSION

It is difficult to draw conclusions from a single case, and it might well be argued that the bleeding was terminated by the free flow of bile into the intestinal tract, following the release of the obstruction in the common duct.* This case is added to the literature because only by an accumulation of such cases can the worth of a new treatment be determined. The rapid decline of the prothrombin bleeding time and the parallel cessation of the bleeding following the administration of Vitamin K are, to say the least, strongly suggestive of cause and effect and, added to other case reports, indicate that Vitamin K is an important aid in preventing fatal hemorrhage following surgery in jaundiced patients who suffer from a bleeding tendency.

CONCLUSIONS

1. The prothrombin bleeding time of Quick provides a quantitative test for determining the bleeding tendency in jaundiced patients.

2. Vitamin K is a valuable therapeutic adjunct in preventing fatal hemorrhagic complications following surgery on jaundiced patients. The value of Vitamin K lies in controlling the bleeding tendency in the interval between the time of operation and such time as the patient is able to benefit from the surgical relief of the obstruction.

3. In jaundiced patients with an elevated prothrombin bleeding time, Vitamin K should be administered prophylactically before the operation and postoperatively until such time as the liver shall be able to elaborate concentrated bile into the intestinal tract and until such time as a balanced diet can be consumed.

THE TREATMENT OF COMMON FOOT DISORDERS

William R. Hamsa, M.D., Omaha Clinic
Omaha, Nebraska

The problem of foot disturbances has been presented so frequently that a new contribution to the subject would be difficult indeed. However, in spite of the voluminous literature on the subject, the medical profession has not coped with the problem, and the treatment of these disabilities has fallen into the hands of the shoe clerks, vendors of various pads and supports, the quacks, or those ever-increasing specialists, chiropodists, who do well indeed when one considers the foot alone as needing treatment. The foot is an organ that reacts to either local or systemic disease, hence foot imbalance is a health problem, for its effects may be felt in the entire body economy; conversely, a systemic disorder may manifest itself primarily in the feet. These problems, therefore, belong in the realm of medicine. In the subsequent remarks, an effort will be made to demonstrate how a practitioner with very little outlay of money and equipment but with an understanding of the anatomic and physiologic changes in the foot may obtain very satisfactory results in the vast majority of painful feet.

The presence of two arches in the foot is appreciated even by the laity. The construction and action of these arches is intricate and each arch will be considered separately. The foot may be divided longitudinally into two portions, the outer portion being composed of the os calcis, cuboid, and fourth and fifth metatarsals, and the inner consisting of the astragalus, scaphoid, cuneiforms and first, second and third metatarsals. The posterior end of the inner portion is superimposed on the outer portion in such a manner that the astragalus rests almost squarely upon the os calcis. There is a medial overhang of the astragalus which is partially supported by the sustentaculum tali; a projection of the stresses from the tibia through the astragalus barely strikes the weight-bearing surface of the os calcis. (Fig. 1). Thus there is an inherent tendency for the astragalocalcaneal joint to shift into valgus or pronation or eversion. This tendency is aggravated by any shortening of the Achilles tendon or contracture or spasm of the peroneal muscles. On the other hand, it may be prevented by the medial ankle and astragalocalcaneal ligaments and the tendons of the flexor hallucis longus which passes under the sustentaculum tali as a sling, the flexor digitorum longus, and the tibialis posticus. If this medial protective apparatus weakens, the threatened tendency to eversion or rolling out of the os calcis becomes an actuality. Since the midtarsal joint allows three degrees of freedom of motion, namely, flexion-extension, abduction-adduction, and rotation, the astragalus also shifts downward, forward and inward, the head pressing against the calcaneoscaphoid or spring ligament. Thus the forefoot is abducted and the longitudinal arch depressed. The result is a convex inner border of the foot with a prominence of the astragalar neck and scaphoid tuberosity.

The anterior arch which is composed of the five metatarsal heads is an arch in the resting phase only. On normal weight-bearing, the arch disappears and each head bears its share of the superimposed weight. This arch tends to adapt itself to the floor at each step, regardless of the

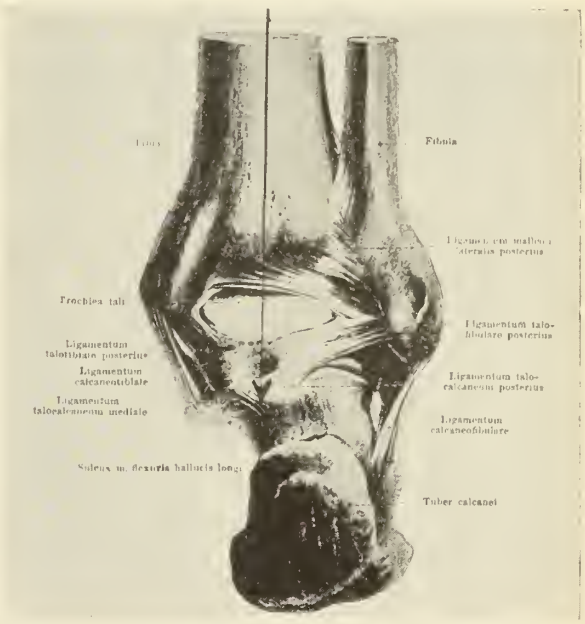


Fig. 1. Posterior view of ankle showing normal position of os calcis under and lateral to astragalus. (From Spalteholtz Atlas.)

position of the remainder of the foot. Should the os calcis be in pronation and the forefoot abducted, the anterior arch would be in a supinatory position if the relation between these two regions, heel and forefoot, were considered[1]. This point has been recognized since the turn of the century but has not been generally accepted. (Fig. 2.)

The gait mechanism remains to be considered. During normal gait, the forward swinging leg is placed on the ground, the heel bearing the superimposed weight; as the body center of gravity passes over the planted foot, the weight stress is transmitted through the outer portion of the foot to the ball. To this point, the function of the foot has been supportive only. With the center

of gravity well ahead of the foot, the driving function now manifests itself by transmission of weight from the ball of the foot to the toes, the forefoot turning into pronation to pass the weight to the great toe which is the final impelling lever in thrusting the body forward before the foot is lifted up to be swung forward and repeat its supportive phase.

Briefly summarized, the component deformities of a flat foot are pronation of the heel which is easily visible from behind, depression of the longitudinal arch, and abduction of the forefoot visible from an anterior and medial view, with supination of the forefoot apparent only when compared to the posterior portion of the foot.

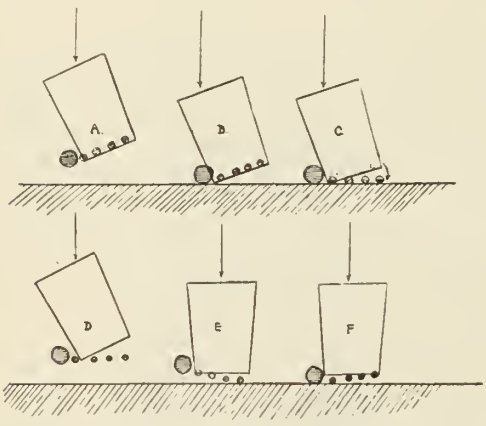


Fig. 2. (From Steindler, Journal of Bone and Joint Surgery, April, 1929.) A—Os calcis in valgus. Forefoot in valgus. Non-weight-bearing. B—Foot as in A applied to the floor. Outer metatarsals not bearing weight. Juvenile flat foot. C—Same foot after compensatory supination has taken place. The forefoot now bears weight on all five metatarsals. D—Supinated forefoot, non-weight-bearing (Compare with A). E—Foot of D with os calcis brought into a vertical position by means of an inner wedge under the heel. Weight is borne on outer metatarsals onto which the foot rolls. F—Foot of E with an additional wedge under outer metatarsals, entire foot bearing weight.

The mere presence of a flat foot does not indicate that treatment is necessary. A low arch may be present for years and produce no symptoms, acting as a very serviceable foot. This type of foot does, however, tend to develop arthritic symptoms on less provocation, and only then are symptoms of pain produced, not because of strain but because of motion in the arthritic joints. As a general rule, it is the normal appearing foot which is becoming flat that produces the symptoms of pain localized to the longitudinal arch, anterior arch, or both, with frequent reference to the calf muscles. Frequently cramps in the calf are the earliest symptoms. A completely flat foot may develop pain about the medial malleolus on the basis of ligament strain and possible tenosynovitis of the posterior tibial tendon sheath[2].

Physical examination of a flat foot evaluates the tender areas, usually the calcaneoscaphoid ligament just below the scaphoid, the anterior arch, the origin of plantar fascia at the os calcis, the medial ankle ligaments, and at times the sinus tarsi laterally where the lateral malleolus may impinge against the tarsus. The length of the heel cord must be ascertained. First, the knee joint is completely extended and the foot is inverted to prevent extension in the midtarsal joint. On dorsiflexion of the ankle, a right angle position should be obtained normally. Any equinus indicates the degree of Achilles tendon shortening. The subastragalar, ankle, and midtarsal joints are examined to determine restriction of motion or presence of pain. Inflammation may denote arthritic activity. All muscles are tested to determine their individual strength and relative balance. The circulatory status is evaluated from a study of the local temperature, color changes, edema, varices, and pulsations of dorsalis pedis and posterior tibial arteries. The patient's gait is observed while walking away from and toward the examiner. Here very minor variations can be ascertained. The foot may be placed cautiously on the floor with practically no ankle motion and with no takeoff whatever, as in severe arthritis. The heel may be protected if painful conditions are present on its inferior surface. The outside of the foot may be used alone in painful affections about the great toe. Lastly, the general examination may reveal general systemic changes. Endocrine disturbances, vitamin deficiencies, cardiovascular renal disease, neurologic changes, low back strain, and general debility are frequent findings. Among the curiosities of foot diagnosis are the excessively tender toes of the drug addict[3]. A roentgenogram in two planes is an asset, whether it shows changes or is entirely negative for pathologic changes. Laboratory work must not be postponed. Any leukocyte count below 5,500 or above 8,000 may be an indication of a low grade infection so often seen in arthritic and periosteal irritations. Certainly the patient with leukopenia is entitled to a tuberculin test. The muscular weakness of pernicious anemia should also be borne in mind.

In contrast to the flat foot, the high arched or cavus foot presents a different picture. The longitudinal arch is elevated, the plantar fascia is contracted, the forefoot may be adducted, the metatarsal heads are prominent plantarly as a result of the over-exertion of the toe extensors which have hyperextended the metacarpophalangeal joints perhaps to the stage of dorsal luxation of the proximal phalangeal bases. The weight-bearing surface of the foot is markedly decreased in size, being represented by a small area under the heel, little or none of the outer portion of the sole, and portions of the anterior arch, usually

only the first and fifth metatarsal heads. These areas, bearing an unusual stress, respond with the development of calluses, which may eventually show signs of irritation, inflammation or even ulceration. The chief points of tenderness are, therefore, the anterior arch, or portions thereof, and to a lesser degree the heel tuberosity.

In treating any foot disability, the first step toward correction is obtaining a proper shoe which must have the following characteristics:

1. The last must be straight; that is, the inner edge of heel and sole must be a straight line. In a flat foot, this controls the forefoot abduction.
2. The cap and ball must be sufficiently wide and long to allow free action of toes and anterior arch.
3. The counter should fit the heel snugly.
4. The vamp should lace snugly, giving support to the first metatarsal shaft.
5. The sole should be flat and heavy enough to protect the sole of the foot.
6. The shank should contain a built-in arch support, preferably of steel.
7. The heel should be flat and have straight sides; for men a height of 6/8″; for women 12/8″ to 14/8″; it should fall in the axis of the leg and not behind it.

Let us assume that we have a static flat foot with symptoms showing movable joint, good muscle power, and no general systemic changes. The depression of the arches is graphically recorded by smearing the sole of the bare foot with scarlet red ointment, or any other removable color medium, and then placing the foot on a sheet of paper with the weight placed on this foot. (Fig. 3). The weight-bearing areas leave



Fig. 3. Prints and designs for (a) pes planus, (b) normal arch, and (c) pes cavus.

their imprint which is used as an outline for the support. Some argument may be raised that this is not a replica of the true weight-bearing surface, but it is adequate for practical purposes. The support is made of saddler's felt or of sponge rubber. The longitudinal arch portion of the support may be 3/8″ thick on the inner aspect but should taper to a feather edge on the outer



Fig. 4. Finished insoles of felt and sponge rubber.

edge and posteriorly[4]. The anterior portion which reaches just behind the metatarsal heads and places weight stresses on the metatarsal shafts, may be as high as 3/16″ and has a shorter and sharper taper than the longitudinal arch portion. These coarser changes are easily made with a sharp knife and a pair of scissors. The finishing touches may be added with a small coarse emery wheel. The finished product fills in the space between the foot and the shoe, thus transmitting the pressure evenly to all parts of the sole (Fig. 4). The proper placement within the shoe is determined by measuring with a carpenter's caliper the distance from the back of the heel of the foot to the third metatarsal shaft just posterior to the head. Without changing the set of the caliper, it is placed within the shoe and a similar distance is marked off on the sole. The anterior limit of the support is thus easily determined; it is held in place with two small tacks or fastened with rubber cement. Either method allows removal and change of position if necessary.

There now remain the heel and forefoot deformities. Any equinus is accommodated by a heel elevation. The os calcis pronation is wedged back to the vertical position by a 1/8″ wedge placed under the medial half of the shoe heel next to the sole. The forefoot supination is changed by a similar wedge, but placed to the outer half of the sole, into a pronation. (Fig. 5). The completed corrections are worn for a few hours or a day as a trial; correction may be increased by adding lifts under the edge or de-

creased by grinding off as required. When completely satisfactory, the support may be covered with a thin layer of leather if desired. When the wedges are applied, the patient may feel they are intolerable for twenty-four to forty-eight hours, but if no real pain is produced, the discomfort should be tolerated since the static stress relief may consume that period of time. The use of supports is, however, only palliative. There can be no definite permanent improvement unless the muscular structures are reeducated sufficiently ultimately to maintain the corrected position. Foot exercises should be diligently and religiously performed each day. Toe flexion over the edge of a board and exercises tending to develop dexterity in picking up objects with the toes are of value. Walking on the outside of the feet with the toes flexed develops tibialis anticus and posticus groups. A mild shortening of the heel cord can



Fig. 5. (From A. Steindler, Journal of Bone and Joint Surgery, April, 1929.) Shoe corrections as appliled. Shoe on left has anterior "heel" or bar in addition.

be stretched passively by the parents of a child or actively by an older individual, who stands in bare feet, facing and close to a wall, with the feet turned in and the toes flexed; leaning forward and touching the chest to the wall, keeping the heels on the floor, produces a tension in the heel; increasing the distance from the wall increases the tension.

The rigid flat foot is approached more radically. Preliminary manipulation under anesthesia and a month's immobilization in a plaster cast with the heel in supination, the forefoot in pronation, the longitudinal arch well molded up and the ankle joint at a 90 degree position are necessary. The usual shoe corrections and exercises are then instituted with the addition of an outside iron brace and valgus T strap to give added support. A more solid support, such as a solid leather insole or metal plate, may be necessary if the elastic types fail to relieve symptoms. This is often the case in arthritic patients. If all these conservative measures fail, surgical intervention in the form of tendon lengthenings and transplantations and joint arthrodeses are definitely in order.

For the high arch or cavus foot, an elastic support is made along similar lines. It is higher medially and laterally and should extend farther forward under the elevated metatarsals. Occasionally a more solid support of solid leather may be necessary. If the cavus is not severe and not progressive, considerable correction may be obtained by stripping the plantar fascia off the os calcis and forcibly wrenching the foot into dorsiflexion[5]; at such a time, the heel cord is not disturbed because the heel must be well fixed to obtain any cavus correction; the corrected position is maintained in a cast for six weeks following which a support is again resorted to. A severe cavus responds only to dorsal wedge resection of the tarsus.

Pain in the anterior arch may remain localized to the arch as a simple strain or callus irritation, or it may be a sharp lancinating pain in one of the middle toes, radiating into the tip of that toe. The latter type is known as metatarsalgia. It is due to impingement of a plantar nerve between the metatarsal head and the base of support, or between two metatarsal heads. The pain is brought on by walking and relieved by rest and removal of the shoes. In youngsters, epiphysitis of the metatarsal head is associated with local pain. Treatment of any pain in this region must relieve this metatarsal head or heads of weight-bearing and this is accomplished by fitting a small piece of felt or sponge rubber into the shoe just behind the head or heads in question. An anterior heel of 3/16", nailed to the bottom of the shoe sole just behind the head region, is also an effective method; this "floats" the anterior arch and usually the toes as well. Under anesthesia, the toes may be manipulated into flexion and immobilized in a cast for one month. If conservative methods fail, surgical intervention consists of tendon transplantation of long toe extensors to the metatarsal shaft in an effort to elevate this head and in rare cases, resection of the metatarsal head or of the plantar nerve.

Bunions present themselves in various stages. The preponderance of females with this deformity is obvious to all. Beyond a doubt, the chief etiologic factor is improper shoeing during the adolescent and early adult years as a result of the

demands of fashion. Some are a result of the same static stresses as flat feet. Only a very small number are due to congenital or traumatic changes. The abduction of the toe with the soft tissue enlargement over the metatarsal head prominence, the bunion, characterizes the deformity. The latter often becomes inflamed and produces the chief symptom, pain on pressure. An early deviation of the toe responds favorably to an adduction toe night splint, daily gentle manipulations in a corrective direction and a proper shoe. The vamp may need stretching to accommodate the head prominence. Marked deviations with associated deviation of the small toes necessitate more radical treatment, that is, bunionectomy[6]. A word of caution is in order regarding the realignment of the big toe. If the individual will not subsequently use a completely correct shoe, which many women object to for cosmetic reasons, considerable difficulty will be experienced in fitting shoes because the big toe will be aligned on the metatarsal but the remainder of the toes will still be abducted, thus producing a wide space between the first and second toes, and consequently a very wide forefoot. When it is certain that the patient will return to the conventional type of shoe, it is preferable to remove only the metatarsal head prominence or exostosis and the bursa, and not disturb the deviation. Regarding choice of procedures, a radical resection of the metatarsal head of the Hueter-Mayo type is necessary if definite arthritic changes are present. Normal joint cartilage should speak for conservative procedures, such as the Silver bunionectomy. After ten days, motion is begun, a night splint in best adduction is fitted, and shoes are corrected if necessary with a 3/16″ anterior heel to relieve the big toe weight-bearing. Exostosis and prominences of the fifth metatarsal head are treated similarly and respond very favorably.

A single or several hammer toes with clavus or corn formation are also a deforming disability. Probably the chief etiologic factor is the use of shoes that are too short and hence maintain the toes in extension of the metatarsophalangeal joint and flexion of the interphalangeal joints. The dorsal prominence of the proximal interphalangeal joint is a point constantly irritated by the shoe, and the skin responds by forming a clavus. Naturally the correction of the contracture itself is the proper approach to treatment of the "corn". The laity obtains relief by using small perforated pads over the clavus. Conservative methods may produce very satisfactory improvement. Proper shoes are the first requisite. Daily manipulations to correct the extension contracture of one joint and flexion contracture of the other joints will stretch the dorsal capsule and extensor apparatus considerably, but this improved position must be constantly maintained for a long period of time and a really efficient splint is difficult to place in a shoe. A fairly efficient apparatus may be fashioned by passing a thin, narrow leather strip over the dorsum of the toe and anchoring the ends through slits in a piece of orthopedic grade leather, carefully adjusting the tension to maintain the most correction that can be tolerated. Such an appliance is comfortably worn inside the stocking. For night wear, the conventional plantar splint is used. These methods failing, wedge resection of the proximal interphalangeal joint with lengthening of the extensor tendons is performed under local anesthesia. Marked hammering of all toes necessitates more radical measures such as open dorsal capsulotomy, implantation of long extensor tendons into the metatarsal shafts just proximal to the heads, and lengthening of the short extensor tendons to which are anchored the proximal ends of the distal segments of the long extensors[7]. Immobilization of the toe or toes corrected by surgical procedure should be continued for five to six weeks.

The so-called "soft corn" is a similar problem often found between two toes. Here a mycotic lesion is suggested by the presence of multiple areas of similar nature and the visualization of the fungus microscopically after treating a flake of skin with 20 per cent potassium hydroxide for two to three hours. Many of these "corns" are due to the pressure of a small exostosis on the articular margin of a joint against the neighboring toe. A roentgenogram will reveal the latter if it is present. A keratolytic agent, such as ten per cent salicylic acid in flexible collodion, allows removal of the bulk of the clavus; then by placing a small pad of felt or cotton between the toes distally, pressure is relieved. To prevent maceration, the feet are kept dry by frequent changing of stockings and by dusting with a powder made of equal parts of boric acid and salicylic acid. If this treatment fails, the clavus is resected under local anesthesia. An exostosis, if present, is included. An ingenious procedure, and a very successful one, consists of resection of the clavus and all apposing skin between the two toes to allow suture of the toes together, thus simulating a syndactylism.

Inflammations about the toenail, usually the great toenail, are minor but painful incidents. Pressure of a shoe, stocking, or neighboring toe against the toenail results in painful areas on either side of the nail. Improper trimming of toenails in a circular fashion allows the most lateral portions to remain undisturbed and to grow

distally as sharp projections into the soft tissues, producing breaks in the skin surface which become infected. This infection often spreads underneath the nail. In mild or early cases, a small piece of cotton is tucked under the corner of the involved nail, to lift the "ingrown" portion out of the tissues. An adhesive plaster strip, wound around the toe and anchored to the opposite side of the nail, pulls the soft tissues away from the nail. The irritation of an ill-fitting shoe should, of course, be removed. When quiescent, and after the nail has grown beyond the soft tissues, recurrences may be prevented by trimming the nails squarely across the tip. Aggravated or recurring paronychiae are treated surgically[8]. Under local anesthesia at the base of the toe, with a rubber band around the toe as a tourniquet, an oblique incision is made at the proximal corner of the nail and the soft tissues reflected laterally and proximally. The lateral quarter of the nail is removed from the tip, to and including this portion of the nail bed, which is curetted to prevent further growth. The soft tissues readily fall into place. A method recently described resects a wedge of soft tissue along the nail without disturbing the latter and by primary closure of the defect pulls the soft tissues away from the buried nail corner. This, however, is applicable only to mild cases[9].

A painful heel seriously disturbs the gait mechanism and sequence. In growing children, posterior heel tenderness suggests an apophysitis of the os calcis, which is readily recognized on the roentgenogram by the denser fragmented growing portion. With protection alone by means of an insole or a temporary plaster cast, complete recovery follows in two or three months. In adults, the tenderness is almost invariably localized to the inferior tuberosity region, the weight-bearing area. Here the roentgenogram may show nothing, or it may show slight proliferation or a definite spur. The neisserian etiology of the latter is now known to be remote. Many are due to congenital changes, response to static stresses, or proliferations associated with arthritis. The insole in this instance must be sufficiently high in the longitudinal arch portion to relieve the heel of considerable weight. The heel portion is cupped to receive the tender area. Diathermy often proves of definite value. Focal infection possibilities should be investigated. Conservative methods failing, surgery is resorted to, with resection of the spur or exostosis if possible; otherwise a rotation osteotomy of the os calcis tuberosity to place the painless posterior portion inferiorly as devised by Steindler is advisable. These results are very satisfactory.

Rather unfortunate but very true is the fact that the medical attitude toward painful feet has driven patients to someone who has signified his interest in this type of disability. A few years ago, patients requiring physiotherapy drifted to the osteopath and chiropractor; present medical interest in physiotherapy and its various forms has brought improvement in both patients' relief and physicians' incomes. Is it possible that the foot will finally be rated as necessitating a specialty? Will the chiropodist become as necessary to general health as the dentist? Since foot imbalance and difficulties are a general health problem, they should remain in the hands of the medical profession.

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KIDNEY FUNCTION TESTS*

WILLIAM C. EGLOFF, M.D., Mason City

The interpretation of any kidney function test may be made according to standard charts and percentage figures, but a full realization of the significance of these tests will only come to the physician who, either from experience or study, has become so familiar with them that he understands their many variations and particularly the extrarenal factors which may profoundly alter the results of any renal function test. Without such knowledge the tests of the kidney function become as dangerous to the best practice of clinical medicine as the electrocardiogram in the hands of a surgeon. There is no laboratory procedure used in clinical medicine which demands more knowledge of the involved pathologic physiology than renal function tests if the clinician wishes to secure a reasonably accurate estimation of the degree of renal damage and the approximate margin of safety.

The primary function of the kidney is excretion and the chief urinary constituents occur preformed in the blood, the kidney merely serving to transfer them to the renal pelvis chemically unchanged, but usually in much higher concentration. It is

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true that the kidney plays an important part in maintaining the level of osmotic pressure, reaction, and other physical chemical properties of the blood. This function of the kidney is accomplished chiefly by virtue of its excretory function. It has also been shown that ammonia is synthesized by the kidney and excreted in combination with acid ions, thereby sparing the body sodium and other fixed bases.

The outstanding characteristic of the normal kidney is its ability to vary its work in accord to the needs of the body. Since the time of Bright it has been known that patients with contracted kidneys produce a pale urine of low specific gravity. In 1898 von Korányi[1] demonstrated by physical chemical methods that severe damage to the kidney resulted in the production of a urine with a freezing point above that of normal urine. He further observed that a severely damaged kidney was not only unable to produce concentrated urine, but also was unable to produce very dilute urine.

For clinical observations it has been shown that specific gravity determinations are sufficiently accurate for practical purposes in determining urine concentration. As renal damage progresses the kidneys gradually lose their power of accommodation which they normally have in producing urine of both high and low specific gravity. The maximum kidney impairment is reflected by a fixation of the specific gravity of the urine between 1.008 and 1.012 regardless of the fluid intake or extrarenal modes of elimination. It has been shown by many workers, Hetényi and Nógrádi[2], Major[3], Van Slyke, et al.,[4] and Linder[5] that the limitation in the concentrating power of a kidney is associated with a decrease in the concentration of all the urinary constituents. This applies to water excretion as well as the soluble urinary substances, but is often masked by the compensating polyuria. It is also known that certain foreign substances (xylose, phenolsulfonphthalein, sodium ferrocyanide and certain other substances) are eliminated in abnormally low concentration when renal function is impaired. The fact that only certain urinary constituents accumulate in the blood when decompensated renal insufficiency is present, while others remain normal or diminished, leads to the theory of selective kidney injury. There were two main types; the nitrogen-retaining type and the chloride-retaining type. In the first it was assumed that the kidney damage affected only the ability to excrete nitrogen while the ability to eliminate chloride was not affected. This was based upon the fact that patients with high blood nonprotein nitrogen frequently show no increase in the blood chloride and no edema. The fact that the blood chloride is not elevated has been adequately explained on the basis that these patients are usually on a low chloride intake and frequently lose large quantities of chloride in the vomitus. Feeding these patients normal amounts of chloride results in an increase of the blood chloride. The belief for the selective renal injury resulting in chloride retention was based on the observations that during edema formation in renal diseases there is a great decrease in the urinary chloride, while the nitrogen output remains normal, and no accumulation of blood nonprotein nitrogen occurs. With our more recent knowledge of edema and the now generally accepted fact that edema is primarily of extrarenal origin, we know that the kidney is not at fault. In these edematous patients the chloride is held in the edema fluid so that during the formation of edema the chloride does not reach the kidneys; also this type of edematous patient has no impairment of renal function in spite of the high degree of albuminuria. Consequently, these older theories of selective injury to the various kidney functions are not satisfactory explanations for the blood picture of uremia which is characterized chiefly by the accumulation of urea without a corresponding increase in concentration of chloride.

Fishberg[6] believes the most logical explanation is based upon a quantitative study of the changing blood chemistry. There are three factors which determine chemical changes in the blood when decompensated renal insufficiency is present. "First, the concentration ratio of the individual urinary constituent; second, the possibility of extrarenal excretion of the urinary constituents; third, variations in the amounts of the individual urinary constituents brought to the kidneys." It is observed that "these substances which accumulate in the blood in renal insufficiency are precisely the ones which are highly concentrated by the kidneys." The concentration ratio of a substance is its concentration in the urine divided by the concentration in the blood. For instance the urea concentration in the urine of a normal individual is 2,000 milligrams per cent while in the blood it is 30 milligrams per cent, giving a normal concentration ratio for urea of approximately 66 while the normal concentration ratio for chloride is 1.4. Consequently, if we assume that renal function was completely absent and all other factors remained unchanged the concentration of urea in the blood would be forty-seven times as rapid as that of chloride. These calculations are only approximately correct, but offer a logical explanation of why the blood chloride level does not increase in

proportion to the increase of urea during renal insufficiency. The second factor relative to the blood chemical changes is extrarenal excretion; for instance under normal conditions 40 per cent of the total water excretion is accomplished extrarenally. It is reasonable to believe that extrarenal elimination could take over, by vicarious activity, the complete elimination of water, even if renal function ceased entirely. This is substantiated by the fact that there is no increase of the blood volume in chronic renal insufficiency. Likewise it is probable that extrarenal activity could adequately excrete calcium and magnesium. In contrast to water and these salts, urea and creatine have practically no extrarenal elimination and depend almost entirely on the kidney function for their excretion. The third factor concerns variations in the supply of the individual urinary substances which are brought to the kidneys for elimination.

From this point of view the excretory substances may be divided into two groups. The first group consists of the end products of protein catabolism which are all of the substances elevated in renal insufficiency. These nitrogenous products continue to be produced in appreciable quantities even if the protein in the diet is greatly restricted as a result of destruction of tissue protein. The second group is composed of those substances which do not increase in the blood, such as the water content, chloride, and certain other salts. It will be noted that these substances are the ones with an appreciable extrarenal source of elimination and also those which can be controlled by dietary restrictions. Consequently it can be seen that the blood chemical changes in uremia are greatly influenced by the amounts of urinary substances which are presented to the kidneys for elimination, the variation of this factor depending upon extrarenal activity, dietary restrictions, and metabolic processes. It must be remembered that abnormally high food intake as well as intestinal obstruction and obstruction to the urinary flow may cause an elevation of the blood chemistry in the absence of permanent kidney damage, or influence the height of these determinations in the presence of true renal insufficiency.

In summarizing our present knowledge of the pathologic physiology of the kidneys, we must conclude that impairment of renal function does not affect one excretory substance more than another. In other words, impairment of renal function is a quantitative and not a qualitative variation. As Fishberg[6] has so concisely stated, "No matter what the anatomical substrata, there is only one variety of impairment of renal function, namely that in which the ability to excrete all the urinary constituents is impaired". Whether or not future physiologic research will continue to support this unitary nature of impairment of renal function, it is nevertheless of tremendous help to the clinician. A thorough knowledge of the physiologic facts which I have briefly reviewed is essential to an intelligent interpretation of renal function tests. Clinically it is of considerable benefit to differentiate between compensated and decompensated renal function. Compensated impairment of renal function exists when adequate kidney function tests consistently show values less than normal, but no retention of excretory products is present. Of all the renal function tests a careful concentration test, as measured by the specific gravity, is not only the most reliable, but the simplest of all the tests to determine a decrease in kidney function.

The reason that a certain degree of renal damage can occur without resulting in retention of excretory products is that the kidneys possess a large factor of safety. It is estimated that five-sixths of the renal units must be rendered functionless before the blood level of any of the nitrogenous metabolites or organic salts become increased above normal levels. As renal impairment progresses the kidneys lose their ability to produce concentrated urine and therefore must produce a greater volume of urine than the normal kidneys in order to eliminate a given amount of waste products. As the damage progresses polyuria may become necessary for the elimination of the waste products even when the patient is on a basic diet. Decompensated renal function occurs when the kidneys are unable to prevent retention of nitrogenous products in the blood. This may occur if the volume of fluid available to the kidneys becomes inadequate to allow complete excretion because of the limited concentrating power of the kidneys. This reduction of available fluid may result from myocardial insufficiency or from a decrease in fluid intake, either voluntary or otherwise. During the formation of edema so much fluid may be diverted to the tissues that the kidneys fail to receive an adequate amount of fluid to accomplish complete excretion. Frequently an acute febrile condition precipitates a compensated kidney impairment into a state of decompensation. This may be due to both an increased consumption of fluid by the body and the added rise in the metabolites beyond the level capable of elimination by the damaged kidneys. When considering the cause of renal decompensation three factors must be remembered; namely, "urinary concentration, urinary volume, and quantity of excretory products brought to the kidneys."

Impairment of kidney function may occur as a disease entity, as in glomerulonephritis or polycys-

tic degeneration. It may also occur in association with many general diseases which result in injury to the kidneys, such as hypertension, arteriosclerosis, mercurial necrosis, amyloidosis, tuberculosis, and pyelonephritic disease. When the kidney damage is unilateral the affected kidney will show a decrease in function as reflected by the decrease in concentration (Albarran[7]). In contrast to these organic diseases just mentioned, decreased renal function may occur in certain conditions without adequate anatomic changes, and when the underlying condition is removed the kidney quickly recovers its normal functional activity as measured by renal function tests. Such conditions are pernicious anemia (Christian[8]), prostatic hypertrophy and neurogenic paralysis of the bladder with obstruction to urinary flow. Consequently the interpretation of renal function tests must be carefully considered before the permanent degree of renal damage is estimated. As in nearly every other clinical test, a series of tests increases the accuracy with which a true estimation of the degree of damage and rate of progression can be estimated.

The most satisfactory criteria for determining the comparative value of renal function tests (Stieglitz and Knight[9]) are as follows: first, simplicity of both test and calculations; second, the absence of harmful effects to the patient; third, an accurate measurement of minimal renal damage necessitates that the test place the kidneys under stress; and fourth, the results of the tests should be reasonably uniform in normal individuals. The concentration and dilution test first described by Volhard many years ago is now being accepted, usually in a modified form, as constituting the most sensitive test for qualitative detection of damaged renal function. The reason for this slow realization of the value of the concentration test possibly is due to its great simplicity which is not in keeping with our present vogue of complicated laboratory procedures. The dilution test is rarely used because it gives less constant results, and does not add to the information obtained from the concentration test.

The modifications of the concentration test since first described by Volhard are many. One of these is the Mosenthal[10] test. Briefly, the technic of the test is as follows: the patient must be on a well balanced diet, both in regard to food as well as fluid intake; urine specimens are collected at two-hour intervals from 8 a. m. to 8 p. m. and the specific gravity of each specimen determined. The urine from 8 p. m. to 8 a. m. is collected as a single twelve-hour specimen and the specific gravity and volume is measured. Normal kidney function is said to be present when a specific gravity of 1.020 or over is present in one or more of the two-hour specimens. There must be a difference in the specific gravity of at least .009. The volume of the twelve-hour specimen must not exceed 725 cubic centimeters and usually a volume over 400 cubic centimeters is suspicious. There have been various other modifications of the concentration test, such as that devised by Addis and Shevky,[11] and that by Lashmet and Newburgh.[12] However, these tests have had little clinical vogue owing to the disadvantage of special diet and the more or less prolonged preparatory period. One of the most popular and simple concentration tests is that of Fishberg.[6] The technic is as follows. At six o'clock on the evening before the test the patient eats an average meal except for a liberal helping of protein food and a minimum of fluid. After this he neither eats nor drinks until the test is over. The urine which he passes during the night is discarded. The first specimen is the urine passed when the patient awakens in the morning. He remains in bed and a specimen is obtained one hour later. He then is allowed up, and at the end of another hour a third specimen is collected. If kidney function is normal, the specific gravity of at least one specimen will exceed 1.022, and frequently will be much higher. The test can be made more accurate by limiting the fluid the day preceding the test. As renal impairment progresses the kidneys lose their ability to produce a urine of high specific gravity, and roughly the maximum specific gravity is a measure of the degree of renal damage. The maximum renal impairment is present when the highest specific gravity in the concentration test is 1.010. There is a short phase in the progression of renal damage which cannot be estimated by the concentration test. This phase occurs between the time when the minimum specific gravity of 1.010 is reached and the time when the blood chemistry shows definite elevation. This period is extremely short and I believe is of little clinical significance. One of the common errors of the concentration test occurs when edema fluid is being evacuated, for this may simulate an inability to concentrate. It is true that other factors may affect the concentration test, such as unusually low nitrogen or salt content of the diet, or unusual desiccation or water flooding of the patient during the day preceding the test. These factors can easily be determined and eliminated. The concentration test as just described by Fishberg is extremely simple and, yet it fulfills more of the criteria as described by Stieglitz and Knight, than any of the other kidney function tests.

The specific gravity test determines only the presence or absence of renal impairment. The blood chemistry must be performed in order to

determine whether the kidney damage is in a compensated or decompensated form. For measuring the degree of renal damage the concentration test is not entirely suitable. For instance in advance cases of chronic nephritis where the urea clearance is 20 to 30 per cent of normal, the concentration test may show a minimum specific gravity and consequently cannot reveal further changes, as does the urea clearance test which gradually drops to three per cent of normal. At this point nitrogenous retention occurs and the final stages of renal impairment can be accurately followed by blood chemical determinations. The urea clearance test as described by Van Slyke[4] is the most popular test which involves the measurement of the excretion of normal metabolic waste products, although similar tests have been devised for uric acid, creatinine, or any of the other nitrogenous metabolites. By clearance is meant the rate of excretion expressed in milligrams per unit of time divided by the average concentration of the substance in the blood at the time of the test. This is usually expressed in milligrams per cubic centimeter of blood which would be entirely freed of the substance per minute. The final result is expressed in the percentage which this figure bears to the normal value. The normal range is from 80 to 100 per cent. While the clearance tests, and in particular the urea clearance, reflect more clearly than any other the progress of the renal lesion, they are cumbersome and require two rather complicated analyses. The only advantage of the urea clearance test is in the end stages of impaired renal function: however, I do not feel that this is particularly important clinically because when the patient becomes unable to concentrate his urine above the minimum level of 1.010 the kidneys are usually in a decompensated phase and the progress of his condition can be followed by the elevation of the blood urea or nonprotein nitrogen.

The third type of renal function test is based upon the introduction of foreign substances, such as phenolsulfonphthalein, which was introduced by Rowntree and Geraghty[13] in 1911. This is practically the only dye test used in this country, with the exception of indigo carmine, which is the favorite among urologists. The test, as first described, was essentially the measurement of the amount of dye excreted in a period of two hours, but this is such a poor index of renal ability that the fractional phenolsulfonphthalein test is now in vogue (Young). This has increased the accuracy of the test, but due to the fact that the amount of dye taken from the blood by the liver and other organs may vary from three to 35 per cent (Blasucci[14]), this test is perhaps the most difficult to evaluate. The technic is as follows. The patient drinks 600 cubic centimeters of water and empties the bladder thirty minutes before the test is commenced. Six milligrams (one cubic centimeter) of the dye are injected intravenously. Urine specimens are collected at intervals of 15, 30, 45, 60, and 120 minutes. The first specimen appears to be a reasonably sensitive index of renal function. An excretion of 28 per cent or more is indicative of adequate renal function. The sources of error in the technic of this test are concerned primarily with difficulties in the exact quantitative injection of the dye, accurate timing, and failure to collect all of the urine. However, these are factors which can be controlled if careful attention is given to details of the test. There are certain conditions in which the phenolsulfonphthalein test gives abnormally low results which cannot be confirmed by other kidney function tests. This occurs in the last three months of normal pregnancy (Freyberg, Gillard and Ganesbauer[15]). This is possibly explained on the basis of fetal circulation and mild hydronephrosis which frequently exist during pregnancy. In cases of severe hepatic damage, which results in the failure of the liver to absorb the normal amount of dye, the test will indicate a higher functional result than would normally be the case if the liver damage was not present; consequently a moderate impairment of renal function would be masked.

SUMMARY

Renal impairment is characterized by a loss of concentrating power which applies equally to all the urinary constituents. The urinary concentration test as measured by the specific gravity is the most sensitive kidney function test. It also reflects the progress of impairment sufficiently accurately for clinical purposes. This simple test and blood chemical determinations of urea or nonprotein nitrogen are adequate for the intelligent management of renal impairment. Interpretation of the concentration test, or any kidney function test, should be based on the results of several determinations and a careful clinical analysis of the patient, in order to estimate the possible effect of extrarenal factors which may profoundly alter the results of any renal function test.

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CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

Hospital Staff Meeting of January 17, 1939

NEOPLASMS OF THE SKIN

Ruben Nomland, M.D., Iowa City
From the Department of
Dermatology and Syphilology

Epithelioma constitutes the only malignancy of the skin which needs consideration. The three common types of the epitheliomas are: basal cell, 70 per cent or more; epidermoid (squamous cell, prickle cell), ten per cent or more; and a so-called "transitional" (basosquamous).

The most important factors in the etiology of epitheliomas are the type of skin and exposure to the elements. Epitheliomas are practically unknown in the skin of negroes and are extremely common in the ruddy, freckled individual. Long continued exposure to ultraviolet light such as occurs in farmers and seamen predisposes markedly to epithelioma formation. The incidence of epithelioma increases with age and because of the factor of exposure it is a great deal more common in men in whom at least 90 per cent occurs.

The average basal cell epithelioma usually presents a fairly typical history. The affected individual states that a "pimple" formed; that instead of healing, the scab would come off the pimple to be followed by slight bleeding and formation of a new scab, this process being repeated indefinitely for periods of months or years. The lesion enlarges slowly, possibly attaining the size of a quarter over the course of two or three years. The usual basal cell epithelioma is a firm lesion with an ulcerated center covered by a crust and an elevated border that is rolled, translucent and has been likened to white or pink mother-of-pearl. On this border fine telangiectatic vessels are seen. Basal cell epitheliomas vary considerably in their thickness and the border may be represented by a line no thicker than a thread or may be elevated as much as an eighth of an inch. About one-fourth do not ulcerate but are present as a translucent, red infiltration in the skin.

The epidermoid epithelioma is almost always preceded by a precancerous lesion such as a senile keratosis, x-ray or radium skin or an arsenical keratosis. In addition to localizing on the face they occur very commonly on the backs of the hands. As a general rule they simulate the basal cell epithelioma except that they grow more rapidly, are usually more proliferative, and because they can metastasize, are a great deal more dangerous. Those with a great deal of keratinization metastasize slowly; the very cellular ones rapidly.

The intermediate type of epithelioma is generally indistinguishable from the basal cell, and the diagnosis must be made by microscopic examination.

The prognosis in basal cell epitheliomas is good but the lesion is progressive and does not heal spontaneously. If the eyelids, nose or ears are involved, the local destruction may be serious. Most epidermoid epitheliomas on the skin are slow to metastasize, but occasionally an extremely malignant one will metastasize early.

Destruction by cautery, surgical diathermy or cutting current is as efficient as radiation therapy in the destruction of epitheliomas. The destruction should be carried at least one-eighth of an inch beyond any active margin and deep enough to affect all of the lesion. X-ray and radium are now given in rather large doses. With x-ray, a total of 4,000 to 6,000 roentgens in divided doses of 300 to 400 a day seems to give the best results. X-ray is particularly indicated in the highly malignant epidermoid and larger basal cell epitheliomas.

SUMMARY

Epitheliomas occur primarily in the ruddy individuals who have been long exposed to the elements. The basal cell is benign and never metastasizes. Hence, any form of complete destruction will result in a cure. The epidermoid epithelioma with its variable degree of malignancy requires some judgment in its management. The location on the face and less frequently the hands of a fairly slow-growing, ulcerative, proliferative lesion is very characteristic of all epitheliomas.

EPIDERMOID CARCINOMA OF THE PHARYNX, BUCCAL MUCOSA AND LARYNX

D. M. LIERLE, M.D., Iowa City
From the Department of
Otolaryngology and Oral Surgery

One hundred and sixty-nine patients with epidermoid carcinoma involving the pharnyx, buccal mucosa and larynx have been observed for periods varying from three to seven years. Except in a few instances, operation was contraindicated because of the extensiveness of the primary lesion, metastases or general debility.

In this particular group, the average elapsed time from the onset of disease to the hospital admission was seven to eight months. Although in most instances the lesions present fairly definite symptoms and can usually be seen by a simple examination, early indications were usually disregarded until late symptoms, such as pain, forced the patient to seek advice. Doubtless the enonomic situation was a factor in the delay since most of the patients were indigent. The ages ranged between thirty-five and eighty-five years and there were metastases in 91 of the 169 patients. Nothing new was learned regarding etiology or symptoms. As might be expected, poor hygiene, chronic irritation and infection were indirect factors.

In general, the primary lesions in undifferentiated tumors responded well to treatment, but in most cases metastatic glands appeared which were not evident, but probably were present, at the time the primary growth was treated. As a rule, better results were obtained in older persons with well differentiated tumors. Less differentiated lesions, as would be expected, were seen oftener in younger persons.

Our results in general were poor and discouraging so far as so-called cures were concerned. It must be understood, however, that the patients were for the most part advanced, hopeless cases with no treatment other than irradiation possible. It must also be pointed out that despite instances of discomfort and severe reaction from irradiation, life was prolonged many months with, at least, an abeyance of symptoms.

TABLE I—CARCINOMA OF THE LARYNX

Treatment	1931-32-33 Living	1931-32-33 Dead	1934 Living	1934 Dead	1935 Living	1935 Dead
Operation	7	1	0	0	2	0
Operation and irradiation	4	0	0	0	0	0
Irradiation	0	15	1	5	1	4
	11	16	1	5	3	4

This table reveals that all patients treated by irradiation from 1931 through 1933 are dead. Two, or 7.7 per cent of the entire number treated during 1934 and 1935 are living after three and four years. Most observers find, at least for the present, that differentiated intrinsic cases respond better to surgical attack than to irradiation. Early differentiated cases may be treated without loss of function.

Twelve selected patients were treated surgically from 1931 through 1933, and all except one are alive today. This percentage is high, and over a period of years will be considerably lower. Fourteen or 35 per cent of the laryngeal cases were operable. There were metastases in fifteen cases. It is rather appalling that seven months elapsed between the onset of the disease and the time of treatment in the average case. Many patients, if seen earlier, could have been saved radical treatment with preservation of laryngeal function to a large degree.

Available statistics, including this small group, indicate that operation or combination operation and irradiation are the treatments of choice for intrinsic lesions, particularly those which are well localized and differentiated. (Grades I and II). Occasionally operation also will be done in an extrinsic case, but as a rule irradiation will be the treatment of choice for this type.

TABLE II—CARCINOMA OF THE PHARYNX

Treatment	1931-32-33 Living	1931-32-33 Dead	1934 Living	1934 Dead	1935 Living	1935 Dead
Operation	0	0	0	0	0	0
Operation and irradiation	0	0	0	0	0	0
Irradiation	1	10	0	1	0	5
	1	10	0	1	0	5

Only one, or 5.8 per cent, of the patients was living after seven years. All lesions were very extensive and were inoperable. There were metastases in fourteen patients or in 82 per cent. In most instances, one type of treatment has been as satisfactory as another, although best results seem to have been obtained by irradiation combined with surgical removal.

TABLE III—EPIDERMOID CARCINOMA OF THE TONSIL

Treatment	1931-32-33 Living	1931-32-33 Dead	1934 Living	1934 Dead	1935 Living	1935 Dead
Operation	0	0	0	0	0	0
Operation and irradiation	1	1	0	0	0	0
Irradiation	0	9	0	3	1	3
	1	10	0	3	1	3

There were eighteen patients, one alive seven years after being treated surgically and with irradiation; one alive three years after irradiation treatment. Eleven per cent were still alive after three and seven years. Fifty-five per cent had metastases.

TABLE IV—EPIDERMOID CARCINOMA OF THE ALVEOLAR PROCESS

Treatment	1931-32-33 Living	1931-32-33 Dead	1934 Living	1934 Dead	1935 Living	1935 Dead
Operation	0	0	0	0	0	0
Operation and irradiation	2	1	0	0	0	0
Irradiation	1	2	1	2	1	5
	3	3	1	2	1	5

Three in this group were alive after five to seven years. Two of these were treated by operation and irradiation. Two were treated by irradiation and were living after three and four years. There were metastases in eight, or 30 per cent, of the patients. Five out of sixteen, or 31 per cent, were alive from three to seven years following treatment. The reports are uniformly more favorable for epidermoid carcinoma in this area.

TABLE V—EPIDERMOID CARCINOMA OF THE PALATE (HARD AND SOFT)

Treatment	1931-32-33 Living	1931-32-33 Dead	1934 Living	1934 Dead	1935 Living	1935 Dead
Operation	0	0	0	0	0	0
Operation and irradiation	2	1	0	0	0	0
Irradiation	0	3	0	2	0	1
	2	4	0	2	0	1

There were two patients, or 22.2 per cent, living after five to seven years; both of these were treated by combination operation and irradiation. There were metastases in four, or 44 per cent, of the patients.

TABLE VI—EPIDERMOID CARCINOMA OF THE CHEEK

Treatment	1931-32-33 Living	1931-32-33 Dead	1934 Living	1934 Dead	1935 Living	1935 Dead
Operation	0	0	0	0	0	0
Operation and irradiation	4	2	1	0	0	0
Irradiation	2	26	1	4	0	4
	6	28	2	4	0	4

Eight patients, or 17 per cent, were living after four years. Of these, seven were treated by combination operation and irradiation. Five were living after four to seven years. There were metastases in twenty-one patients, or 44 per cent.

TABLE VII—EPIDERMOID CARCINOMA OF THE TONGUE

Treatment	1931-32-33 Living	1931-32-33 Dead	1934 Living	1934 Dead	1935 Living	1935 Dead
Operation	0	0	0	0	0	0
Operation and irradiation	0	0	0	0	0	0
Irradiation	0	12	1	3	3	2
	0	12	1	3	3	2

In this particular group the irradiation given in every patient who survived was a combination of radium needles and x-ray. The four patients listed as living are the four in which there were no metastatic lesions. Four patients out of twenty-three, or 17.3 per cent, were living after three to four years. These represented fairly well localized and differentiated lesions.

COMMENT

1. Well localized differentiated lesions, for the present at least, respond better to operation or operation with irradiation, than to irradiation alone.

2. Advanced malignancies and undifferentiated tumors do not respond well to any treatment. Irradiation, the only treatment possible in these patients, is definitely of value. Months or years of life with freedom from symptoms may be obtained.

3. Education in regard to early recognition of malignancies is one of the most important problems in treatment.

Discussion

Dr. Kerr: We used to treat all carcinomas of the skin, practically speaking; but in the last few years, there has been a considerable reduction in the use of irradiation, because, as Dr. Nomland pointed out, these can be as well and more quickly treated by local removal. The larger lesions, however, or the lesions which are more or less undifferentiated, and where the chance of dissemination, either by direct growth or by metastases is very likely, are the ones which should be treated by irradiation alone or by local removal followed by irradiation. It used to be said that epidermoid carcinoma did not respond to irradiation. That is because insufficient treatment was given. The same is true in a great many other lesions which we are called upon to treat. We are not treating them sufficiently vigorously. There is one point which I would like to emphasize regarding the lesions about the eye or eyelids. We find that these lesions, which microscopically and clinically appear to be identical with other skin carcinomas, are much less likely to respond to the same amount of irradiation. Those around the canthi or on the lids usually require 4,000 to 5,000 roentgens and sometimes then withstand irradiation. We plan to give much more vigorous treatment to a lesion on the eyelid than if the same lesion were located on the cheek or forehead. I would like to know what Dr. Nomland's treatment is for epidermoid carcinoma of the hand when these lesions are so large that they are not easily removed locally. Our experience is not very satisfactory, although there have been some very good regressions.

In regard to the large amount of material which has been discussed by Dr. Lierle, as he has already noted, most of these patients have come to us so late that we have begun treatment with a count against us of two strikes and three balls. All possible radiation is given with the hope that some of these patients will respond and be sufficiently sensitive so that regression, which we normally expect, will be permanent. The results, as he has shown, are not good. I feel very strongly, as he does, that these early cases particularly, and small epidermoid carcinomas of the buccal mucosa can be satisfactorily treated surgically; but that the cases which are more advanced

must more and more come to irradiation. The Jacksons emphasize that since 1932 their primary results of radiation are particularly encouraging so that they send more and more of the cases to radiology. Carcinoma of the larynx, pharynx, tonsil and tongue requires very intensive external treatment. Administration of 6,000 roentgens into a thin man's neck is strenuous treatment; but with less, the patient loses his larynx, his life, or both. If we can push back the border line indication for operation by more intensive, perhaps better directed, therapy so that the larynx is preserved, a great deal will have been gained, although certainly early cases are best treated by operation. If we persist and learn by our mistakes, we may be able to save some of these patients from laryngectomy, although even without a larynx, one is better off than with a carcinoma. I would like to ask Dr. Nomland why basal cell carcinomas about the eye are so difficult to treat.

Dr. Nomland: Basal cell epitheliomas involving the eyelids are the only ones which offer very much of a problem in therapy, but I do not know the reason why. Highly malignant epidermoid epitheliomas of the back of the hand with no metastasis are best treated by amputation but we have difficulty convincing people that amputation should be done. Consequently, most individuals have preferred to take the chances with x-ray.

Dr. Lierle: I certainly want to agree with Dr. Kerr in regard to laryngectomy. I hope that in the very near future this operative procedure will not be necessary. I am anticipating the time when, with further knowledge, better results will be obtained by irradiation.

Dr. DeGowin: Has the recent propaganda against cancer caused many patients to come in earlier?

Dr. Lierle: It is much too early to expect any results as far as the recent propaganda is concerned. It seems to me that the patients themselves are largely responsible for the fact that we are not seeing malignancies earlier. There are several factors which may enter into each case, such as fear of cancer, the economic situation, and the fact that the early symptoms are so slight the patient will not seek medical advice until the lesion is advanced. Hoarseness may be the only symptom in the case of a carcinoma of the larynx. Early lesions may at times be treated surgically without the loss of function.

Dr. Albright: Which is the better, to have a person look into a larynx and not recognize what he sees, or not to look at the larynx at all?

Dr. Lierle: It is my opinion that every physician should be able to do an indirect laryngoscopy and at least differentiate between a normal and pathologic larynx.

REMEMBER THE DATES
April 25, 26 and 27
Annual Session in Des Moines

THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

LYMPHOSARCOMA WITH CUTANEOUS LESIONS

F. P. McNAMARA, M.D. and
W. A. HENNEGER, M.D., Dubuque

It will be recalled that at previous conferences cases of leukemia in which the first symptoms were ulcerative gingivitis and a breast tumor respectively were reported by Theisen and by Cooley[1]. Today we wish to describe another type of lymphoblastoma in which the cutaneous lesions were an outstanding feature.

CASE REPORT

The patient, a white man sixty-eight years of age, was first seen sixteen months before death because of a painless nodule in the subcutaneous tissues just below the left parotid gland. No other nodules were noted and no lymph nodes were enlarged. At that time a biopsy showed lymphosarcoma. The blood picture was considered normal. He was given x-ray therapy and the primary nodule promptly disappeared. The patient remained well for about fourteen months, and then returned because of a generalized skin eruption and because of an ulcer on the right cheek. At this time there were large numbers of bluish red, slightly elevated nodules over the entire skin surface but most abundant about the scalp, face and trunk. The skin over the subcutaneous infiltrations was smooth and less pliable than usual and the color which was deepest in the central portions of each lesion faded imperceptibly into the surrounding skin. The lesions varied between one and five centimeters in diameter and over the chest tended to become confluent. The lesion on the right cheek was the largest and resembled an indolent boil. Several dilated veins were seen at the periphery and a crust of blood covered the center of the lesion. Cervical, axillary and inguinal lymph nodes were slightly enlarged, discrete and freely movable.

The patient was referred to Dr. Ruben Nomland, Department of Dermatology, State University of Iowa, for further study. The character of the skin lesions at this time are shown in Figs. 1 and 2. X-ray examination showed infiltration of the mediastinum and some fluid in the left chest. An inguinal node and a piece of skin from the abdomen were removed for study and showed diffuse infiltration of the subcutaneous tissue by cells of the lymphocytic series. The patient's

white blood count on several occasions ran almost consistently at about 17,000 with differential counts which averaged 60 per cent neutrophiles, five to ten per cent eosinophiles, five per cent basophiles, four to fourteen per cent lymphocytes, twenty per cent monocytes and a variable number of myelocytes. Dr. Nomland did not believe the blood findings justified a diagnosis of leukemia affecting the circulating blood. He felt that it could be classified as a lymphosarcoma or a leukemia not involving the blood stream.



Fig. 1. Photograph showing the character and distribution of the cutaneous lesions.



Fig. 2 Close-up photograph of the lesion on the right cheek.

The patient was given small doses of x-ray treatment with some benefit and was discharged from the hospital with instructions to return for observation in two months. About a month after returning home he developed bronchopneumonia with pleural effusion and died, eighteen months after the onset of his symptoms.

Necropsy Abstract: Externally the body still showed lesions of the skin similar to those noted clinically, but less prominent, probably because of the treatment. The lymph nodes of the neck, axilla and groins were very slightly enlarged. A firm nodule was felt to the right of the sternum. Each side of the chest contained 250 cubic centimeters of seropurulent fluid with a little fibrin over the dependent portions of each lung. On section each showed irregular areas of consolidation. In each lung there were also several tumor masses varying between one-half and five centimeters in diameter. (Fig. 3). Metastases were also found in each kidney, parietal pleura, the various lymph nodes, and about the thoracic aorta. The character of the lesions in the chest cavity is well shown in the pericardium. (Fig. 4). The liver and spleen showed no metastases. Microscopically all the metastatic growths were similar, being composed of fairly large polyhedral cells



Fig. 3. Section of the right lung showing metastases.

Disease	No. of Cases	Cases of Nodules	Cases of Exfoliative Erythroderma	Cases of Ulcers	Cases of Sinus Formation	Cases of Plaques
Lymphogranulomatosis	12	2 (16.6%)	8 (66.6%)	2 (16.6%)	2 (16.6%)	0
Lymphosarcoma	17	15 (88.2%)	0	2 (11.7%)	0	0
Myeloid leukemia	5	4 (80.0%)	0	0	0	1 (20.0%)
Lymphatic leukemia	5	2 (40.0%)	1 (20.0%)	1 (20.0%)	0	1 (20.0%)
Acute leukemia	0	0	0	0	0	0
Lymphoblastoma	3	1 (33.3%)	2 (66.6%)	0	0	0
Monocytic leukemia	2	2 (100.0%)	0	0	0	0
Plasma cell leukemia	1	0	0	1 (100.0%)	0	0
Reticulo-endotheliosis	0	0	0	0	0	0
Totals	45	26 (57.8%)	11 (24.4%)	6 (13.4%)	2 (4.4%)	2 (4.4%)

with pale nuclei resembling reticulum cells rather than lymphocytes. A few larger cells with lobulated nuclei were also present. Mitotic figures were fairly numerous. The other anatomic findings are summarized in the diagnosis.

Anatomic Diagnosis: Primary. 1. Lymphosarcoma (invasive type with origin probably in the cervical lymph nodes); metastases to the pericardium, parietal pleurae, lungs, kidneys, subcutaneous tissues and to the mediastinal, retroperitoneal, iliac and inguinal nodes and along the descending thoracic aorta; operation (two biopsies, cervical node and abdominal subcutaneous tissue and inguinal node); hemorrhage into lower abdominal wall. 2. Bilateral bronchopneumonia and seropurulent pleurisy. Subsidiary. Arteriosclerosis; bilateral fibrous pleurisy; chronic cholecystitis and cholelithiasis.

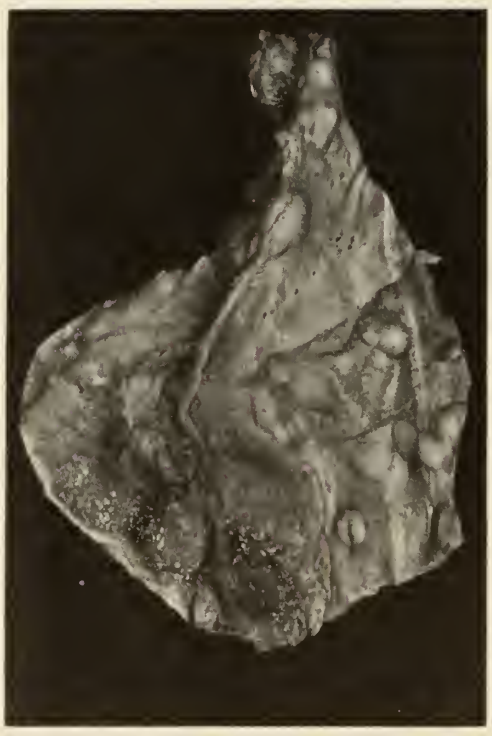


Fig. 4. Portion of the pericardium showing metastatic nodules.

DISCUSSION

Recent literature contains fairly numerous references to the cutaneous manifestations of myeloid leukemia and monocytic leukemia as well as to the ill defined group of diseases involving the hematopoietic and lymphatic tissues usually termed lymphoblastomas. Under the later term are usually included lymphatic leukemia, both leukemic and aleukemic, Hodgkin's disease, mycosis fungoides, and lymphosarcoma. Reticulo-endotheliosis is probably an aleukemic phase of monocytic leukemia, but until the histogenesis of the various cells concerned are better understood it is doubtful if we shall have a satisfactory classification for many of these conditions. Regardless of the final solution of their classification the important fact for clinicians to remember is that various skin manifestations, both specific and incidental, do occur in all of these conditions. In some instances their recognition may clear up an otherwise baffling diagnosis. The types and frequency of the specific cutaneous lesions are indicated in the following table cited by Epstein and MacEachern[2].

Nomland[3] in a review of the clinical phases of the common types of the leukemias with skin changes summarized his findings as follows: "Four types of cutaneous eruptions are recognized to be manifestations of leukemia of the skin. Generalized pruritus, generalized exfoliating dermatitis, and nodular leukemic infiltrations of the skin occur in Hodgkin's disease, chronic lymphatic leukemia in its aleukemic or leukemic phase, and occasionally in other varieties of chronic leukemia. Stomatitis with purpuric eruptions is a common finding in acute leukemia, particularly the myelogenous variety." Nomland did not cite cases of monocytic leukemia but the reader will find excellent articles on this form by Mercer[4], Loveman[5], Lynch[6], and Osgood[7]. Lynch cites the resemblance between the skin lesions of monocytic leukemia and those of reticulo-endotheliosis and regards it as support for the view that the later is an aleukemic phase of monocytic leukemia.

Cutler[8] in a review of thirty cases of lymphosarcoma states that of thirteen necropsied cases,

four (30 per cent) had skin involvement. He credits Kundrat with giving the first clear description of the disease as a growth arising from a group of lymph nodes, or more rarely from a single node or from lymphoid tissue such as encountered in the tonsil, pharynx or the intestinal tract. The disease tends to grow through lymph channels with generalized involvement of groups of lymph nodes. At times the disease is limited to one region such as the mediastinal lymph nodes, the retroperitoneal lymph nodes or the gastrointestinal tract. Cutler quotes Ewing as distinguishing lymphosarcoma from other forms of lymphoma by its local destructive capacity and the formation of true metastases. Histologically lymphosarcoma is divided into two groups; first, reticulum cell sarcoma or large round cell lymphosarcoma arising from reticulum; and second, malignant lymphocytoma arising from the lymphocytes.

The prognosis is poor and death usually results within two years. Occasionally it may be delayed for six to ten years. Radiation is essentially the only treatment, and since the tumor cells are usually radiosensitive, life is definitely prolonged and made more comfortable by x-ray therapy.

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GRANTS RECEIVED BY PROFESSORS AT COLLEGE OF MEDICINE

Dr. Philip C. Jeans, professor of pediatrics at the College of Medicine of the State University of Iowa, has received a grant of $7,500 from the Borden Company for the continuation of his investigations in infant nutrition. This grant was made available through the Council for Pediatric Research of the American Academy of Pediatrics.

Dr. Arthur Steindler, professor of orthopedic surgery at the College of Medicine of the State University of Iowa, has received a grant of $8,500 from the National Foundation for Infantile Paralysis for the investigation of corrective surgical procedures in infantile paralysis.

COMING MEETINGS

Because we feel that many of the members of the Iowa State Medical Society may be interested in a number of national and special meetings, we are herewith publishing a calendar of the approaching sessions. More detailed information may be secured from the Journal office.

American College of Physicians, March 27 to 31, 1939, New Orleans, Louisiana. Secretary, Mr. E. R. Loveland, 4200 Pine Street, Philadelphia, Pennsylvania.

Eighth Annual Spring Clinic, St. Joseph Clinical Society, March 28 and 29, 1939, St. Joseph, Missouri. Headquarters at Hotel Robideaux.

Eighty-eighth Annual Session, Iowa State Medical Society, April 25 to 27, 1939, Des Moines, Iowa. Secretary, Dr. Robert L. Parker, Des Moines, Iowa.

American Medical Association, May 15 to 19, 1939, St. Louis, Missouri. Secretary, Dr. Olin West, 535 North Dearborn Street, Chicago, Illinois.

American Board of Obstetrics and Gynecology. General oral, clinical and pathological examinations for all candidates (Groups A and B) will be conducted by the entire board, meeting in St. Louis, Missouri, on May 15 and 16, 1939, immediately prior to the annual meeting of the American Medical Association. Application for admission to Group A examinations must be on file in the secretary's office by March 15, 1939. Secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pennsylvania.

Amercian Board of Ophthalmology. Examinations for 1939 are scheduled as follows: written, March 15 and August 5; oral, May 15, St. Louis, and October 6, Chicago. Applications for permission to take the written examination March 15, must be filed with the secretary not later than February 15. Secretary, Dr. John Green, 6830 Waterman Ave., St. Louis, Missouri.

Fourth Annual Postgraduate Institute of the Philadelphia County Medical Society, March 13 to 18, 1939, Bellevue-Stratford Hotel, Philadelphia, Pennsylvania. Subject, Blood Dyscrasias and Metabolic Disorders. Director, Rufus S. Reeves, M.D., Twenty-first and Spruce Streets, Philadelphia, Pennsylvania.

Annual Meeting of the American Association for the Study of Goiter, May 22, 23 and 24, 1939, Cincinnati, Ohio, with program of scientific papers and dry and operative clinics. Secretary, Dr. W. Blair Mosser, Kane, Pennsylvania.

First American Congress on Obstetrics and Gynecology, September 11 to 15, 1939, Cleveland, Ohio. Address secretary at 650 Rush St., Chicago, Illinois.

Third Congress of the Pan-Pacific Surgical Association, September 15 to 28, 1939, Honolulu, Hawaii. Sail from Los Angeles, September 7, or San Francisco, September 8. Address Dr. George W. Swift, 902 Boren Avenue, Seattle, Washington; or Dr. Forrest J. Pinkerton, Young Building, Honolulu, Hawaii.

Fifth Annual Meeting of the Mississippi Valley Medical Society, September 27 to 29, 1939, Burlington, Iowa. Secretary, Dr. Harold Swanberg, Quincy, Illinois.

STATE DEPARTMENT OF HEALTH

Walter Dierring

Fremont County Initiates First Aid Course Plan

A Red Cross First Aid Training Course was recently completed in Fremont County. To Max Ellis, transmission supervisor of the American Telephone and Telegraph Company at Hamburg, goes much of the credit for the organization of the class. Twelve physicians of the Fremont County Medical Society, under the leadership of the president, Ralph Lovelady, M.D., served as instructors for the group of sixty-two adults who met each week, from October 31, 1938, until February 6, 1939.

Need for the Course.

Members of the Fremont County Medical Society had noted the relative frequency with which accidents occurred among high school athletes. Victims of highway accidents had often been brought to offices of attending physicians, without first aid of any sort having previously been received. An increase in the accident rate had been observed among certain employees; on the other hand, a decrease in accidents had apparently resulted in another group that had benefited from first aid training.

The Class in First Aid.

Members of the class included several American Telephone and Telegraph Company employees, the volunteer firemen of the county, Boy Scout leaders, highway employees, school bus drivers, filling station attendants, men from the sheriff's office and rural mail carriers. Meetings were held in the offices of the American Telephone and Telegraph Company in Hamburg, Iowa. Several accident insurance companies cooperated by supplying motion picture films and pamphlets. Safety films were shown. The class received personal instruction in bandaging and splinting procedures. The Omaha Fire Department arranged for demonstration of various resuscitation appliances, including a respirator or iron lung belonging to the Burlington railroad. A special meeting was held, attended by Legion men and their families, Boy Scouts and teachers of Fremont county. The course was followed closely by officials of the American Telephone and Telegraph Company and one of the meetings was addressed by the company's director of safety, E. C. Cadelec of Chicago.

"Local newspapers," Dr. Lovelady states, "were liberal with space and built up a very friendly relationship by having a reporter present at each meeting, enrolled in the class."

On the evening of February 6, a graduation program attended by about 200 persons from all parts of the county, was held in the Auditorium of the Legion building in Sidney. Mr. Paul K. Harlan, District 48, plant superintendent of the American Telephone and Telegraph Company, Omaha, presented First Aid Proficiency Certificates to forty-nine persons who successfully completed the first aid course. Five minute talks on symptoms, home treatment and prevention of some of the communicable diseases, were presented by the following physicians of Fremont county:

Physician	City or Town	Subject
B. B. Miller	Tabor	Diphtheria
W. H. Kerr	Hamburg	Scarlet Fever
A. E. Wanamaker	Hamburg	Chickenpox
R. W. Sykes	Hamburg	German Measles
Kenneth Murchison	Sidney	Whooping Cough
R. C. Danley	Hamburg	Streptococcic Sore Throat
H. P. Cole	Thurman	Measles
A. R. Wanamaker	Hamburg	Smallpox
R. A. Powell	Farragut	Poliomyelitis
W. D. Marrs	Tabor	Acute Bowel Infections
L. A. Baldwin	Riverton	Pneumonia
Ralph Lovelady	Sidney	Introduced Speakers

A similar course in first aid training and accident prevention is to be given to Boy Scouts and High School boys; subsequently a class may be organized among the teachers of the county.

Results of First Aid Course.

Members of the Fremont County Medical Society regard this project as having been valuable in a number of respects. Physicians, members of the class and others were made more accident-prevention conscious; opportunity was afforded to meet people from various parts of the county; and

perhaps of most importance, members of the medical society were drawn closer to each other and to voluntary health workers, than ever before.

REPORTS FROM PNEUMOCOCCUS TYPING CENTERS

Workers at pneumococcus typing centers in hospital and other laboratories, cooperate with the Iowa State Department of Health by forwarding reports of laboratory findings on specimens from pneumonia patients.

Pneumonia cases are reported by those in charge of typing stations, on individual report cards distributed by the State Department of Health and mailed back to the department at the time the type of pneumonia is determined. A monthly summary of laboratory findings is also mailed to the State Department of Health, on a special "Pneumococcic Pneumonia Typing Report" form supplied by the department.

The following table (Table I) shows the incidence of the various types of pneumococci as found in typing centers during December, 1938, and January, 1939.

Diagnostic anti-pneumococcic serum for use in the type determination of pneumonia, is supplied by the State Department of Health without cost, to all typing centers in the state. It is hoped that physicians in increasing numbers will avail themselves of the services of the various hospital and other laboratories as an essential control measure against the pneumococcic pneumonias.

TABLE I. PNEUMOCOCCUS TYPE INCIDENCE IN IOWA

Based on Reports for December, 1938, from 21 Typing Centers and for January, 1939, from 47 Typing Centers

Type	December 1938		January 1939		Type	December 1938		January 1939	
	No.	Per cent	No.	Per cent		No.	Per cent	No.	Per cent
1	22	31.9	54	29.5	19	1	1.5	7	3.8
2	12	17.4	32	17.5	20	2	2.9	1	0.6
3	10	14.5	28	15.3	21	2	2.9		
4	3	4.3	9	4.9	22			4	2.2
5	1	1.4	5	2.7	23	1	1.5		
6			2	1.1	24			1	0.5
7	5	7.2	14	7.7	25				
8	1	1.5	5	2.7	26–6				
9	1	1.4	2	1.1	27				
10	1	1.5	4	2.2	28	2	2.9		
11					29			1	0.6
12	1	1.4			30–15				
13	1	1.5	1	0.6	31				
14	2	2.9	5	2.7	32			1	0.5
15			1	0.5	Both 1 and 2			1	0.6
16			1	0.5	Both 2 and 22			1	0.5
17					Both 3 and 29			1	0.6
18			2	1.1	Both 15 and 17	1	1.4		
Total Specimens Typed						69	100.0	183	100.0
Specimens not Typed—Number and Per cent						26	26.3	94	33.9
Specimens Typed—Number and Per cent						69	73.7	183	66.1
Total Specimens Examined						95	100.0	277	100.0

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EXOGENOUS OR ENDOGENOUS REINFECTION IN TUBERCULOSIS

Whether the pathogenesis of chronic pulmonary tuberculosis is best explained on the basis of exogenous or endogenous reinfection is still a much debated issue even among expert phthisiologists. Certainly wide acceptance has been given to the view that tubercle bacilli may remain viable in the centers of the calcified pulmonary and lymph node foci of first infection tuberculosis for many years, and possibly throughout the lifetime of the individual.

Myers[1] from his long experience at Lymanhurst has characterized the primary infection as a double liability, first because it renders the tissues hypersensitive to tuberculoprotein; and second, because it furnishes a potential source of active tubercle bacilli which may break loose from their confines at any time, even years hence, and, seeding themselves on allergic soil, give rise to a focus of reinfection tuberculosis. In support of his contention, Myers cites the report of Robertson[2] of The Mayo Clinic, who in 1933 published his conclusions after an extensive study of autopsy material, that apparently healed tuberculous lesions may become clinically active after varying intervals. Wallgren[3] whose viewpoint is probably fairly representative of continental Europe, believes that pulmonary tuberculosis always develops from an endogenous source, although not necessarily from the primary complex. He maintains that in the pre-allergic period following the initial infection, tubercle bacilli readily escape from the lymph node barrier into the blood stream and are carried to many organs, including the lungs. It is his belief that these secondary foci give rise to tuberculosis years later in those individuals who possess a special disposition to tuberculosis, and who have reached the age of puberty. Furthermore, the persistence of a positive reaction to the tuberculin test is generally regarded as being due to the continuous production of tuberculoprotein by bacillary activity within the foci of the primary complex. Thus many competent observers are convinced of the truth of the statement, "Once tuberculous, always tuberculous."

Now, however, comes the startling conclusion of Feldman and Baggenstoss,[4] also of The Mayo Clinic, that "in adults, endogenous reinfection is unlikely to occur from lesions of the primary complex." They base their claim upon a most complete examination of 103 specimens obtained from 68 unembalmed bodies of human beings who died from causes other than tuberculosis. The ages of the individuals varied from seven to ninety years, the greatest number being in the fourth, fifth and sixth decades. Forty-one of the specimens were from Ghon tubercles, fifty-five from hilar nodes, five from apical scars, one from a tuberculous thymus gland, and one from a mesenteric lymph node. Eight slants of medium and two guinea pigs were inoculated with emulsified material obtained from each lesion. Live tubercle bacilli were found in only one of the 103 specimens examined. The one positive result was obtained in a fifty-four year old man from an encapsulated caseocalcareous Ghon tubercle in the right lung. A Ghon tubercle in the left lung was negative.

It seems doubtful if this work of Feldman and Baggenstoss will be generally accepted as having proved the authors' conclusion that endogenous reinfection from primary complexes is unlikely to occur. As pointed out in an editorial in the *American Review of Tuberculosis*[5] it does prove beyond question that the lesions of first infection tuberculosis may and do heal completely. This is an important contribution, for it has been held by many that these foci seldom, if ever, become sterile. Further than this the authors are hardly justified in going. All the individuals studied were admittedly free from gross tuberculous disease. Would an equally careful search for organisms give the same negative results in a group of individuals with active pulmonary tuberculosis? Further, the report does not consider the possibility of endogenous reinfection from pulmonary foci of hematogenous origin (escapes from the primary complex, but certainly a part of the primary infection) as maintained by Wallgren. The unexpected results reported by Feldman and Baggenstoss will undoubtedly stimulate many other investigators to an attack on the problem, with the desirable pros-

pect that the question of exogenous versus endogenous reinfection may be settled permanently.

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THE FIGHT AGAINST CANCER

The Women's Field Army will conduct its third annual enlistment campaign during April, and the time seems opportune to review once more the objectives and accomplishments of the organization, which represents the coordinated effort of an aroused womanhood against the adult woman's greatest enemy. It is fitting that the women should develop and support such a program since they are by nature the guardians of family health and are likewise the greatest sufferers from this most dreaded of all diseases. It is also consistent with the ideals of the medical profession that its individual members should support the effort which complements so closely its own drive against cancer. It must, however, be admitted that certain members of our group have not cooperated with the women and that consequently the Army has not been able fully to demonstrate its effectiveness. It seems apparent that this attitude is based upon lack of understanding and that further explanation may assist in overcoming the lethargy or antagonism, which are such powerful deterrents to any public health movement.

Cancer is everyone's enemy and will eventually claim one in eight or ten of those who read this appeal for cooperation. In Iowa, malignant disease kills more than 3,100 individuals annually and ranks second as a cause of death, being surpassed only by the various forms of cardiac disease. It is commonly admitted that many cases of early cancer can be cured by therapeutic agents now available, and that the only chance of decreasing the mortality rate lies in bringing the sufferers to competent medical attention at a time when diagnosis can be made only by employment of medical precision methods. This implies education of the laity to seek early medical advice and full cooperation of the profession in utilizing every scientific method to prove or disprove the presence of cancer. Both problems involve active medical participation because the profession alone has the technical knowledge to instruct the public or to improve its own understanding of disease. Capable instructors are at hand, but unfortunately neither group can be forced to listen. Some form of persuasion is necessary and experience has demonstrated that enthusiasm for a new project can best be stimulated by psychologic devices.

The Women's Field Army, as its name implies, has had recourse to this proved procedure. It appeals to women as women to help their less fortunate sisters by making them conscious of the signs and symptoms of early cancer, and does so through a widespread organization that plans to contact all women and many men. It is entirely educational in its scope and is content to leave diagnosis and treatment in the hands of the physicians. Under the present organization in Iowa, the campaign is under the control of the Cancer Committee of the State Society, and continuance of this relationship offers the best assurance to the profession that the movement will continue to function as an adjunct to better medical practice. The Executive Cancer Committee, composed of five members, constitutes, with the Commander for Iowa, the Executive Committee of the Women's Field Army. Although the latter organization is affiliated with the American Society for the Control of Cancer, the Iowa Division is free to develop its own program as it sees fit. The national organization coordinates the various state activities, provides literature and publicity releases, and generally manages the country-wide situation, but does not interfere with the actions of the Iowa Executive Committee in the development of its program.

Education costs money and consequently one of the necessary functions of the Field Army is to raise funds. Women who enlist in the Army pay an enlistment fee of one dollar, and interested men are urged to become contributors. During the past two years, approximately $11,000 has been collected in Iowa. Thirty per cent of this sum has been forwarded to the national organization in partial reimbursement of its expenditures for national promotion, and for literature, posters and other campaign material which have been used in the state. Something more than $7,000 has been expended or will be spent within the next three months within the state. This latter sum covers the cost of three campaigns (1937, 1938 and 1939) during which approximately 200,000 pieces of literature have been distributed, hundreds of lectures have been given, and many exhibits have been arranged. All of the officers of the Army serve without pay, but are reimbursed for necessary travel expenses. In addition, there are certain small expenditures for essential secretarial help for the Commander. The Army does not

maintain an office and there is consequently practically no overhead.

From this description, it should be clear that the Women's Field Army operates very much as do other similar organizations which are concerned with education of the public in matters relating to health. It should also be obvious that the Army has certain advantages in that first, seventy per cent of contributed funds are under local control and under medical supervision; and second, there are no paid officers and no office rent to meet. These facts should make it apparent that the army is being conducted along strictly educational lines, that it honestly and sincerely desires the advice and guidance of the medical profession.

It is always difficult to evaluate any educational program at the immediate time of the effort, because results are slow in appearing. The officers of the Army have, however, been encouraged by reports from many physicians that more patients, especially women, are presenting themselves with early cancers or with suspicious lesions. Moreover, it appears that the rising death rate from cancer in Iowa may have been halted. In any event, the cancer mortality rate was slightly less in 1937 than in 1936, the first time since 1925 that the trend has been downward. Incidentally, the male death rate continued to climb, while that for women declined appreciably. The significance of the change is not clear, but a continuancy of the fall would indicate that the combined effort against cancer is bearing fruit.

The objectives of the Women's Field Army are educational and unselfish, and the Army functions in such a fashion that close cooperation with the medical profession is assured. All physicians who feel that the public is a partner in medical progress and that the new era of medical practice is to be more largely preventive can well support the Army by cooperating in several concrete ways:

1. Advise with the women of your community in their organizational efforts. They will do the work, but they want and need and should have your moral support.

2. Take every opportunity to spread the knowledge of the signs and symptoms of *early* cancer. You are the one who knows more than anyone else about the medical aspects of malignant disease. There is no satisfaction in diagnosing late cancer or in signing a death certificate.

3. Believe in the humanitarian motives of the women who form the Army and of the members of this society who are undertaking to direct its activities into proper channels so that the public health may be served and the menace of cancer may, at least in part, be controlled within the next few years.

RIBOFLAVIN IN HUMAN PHYSIOLOGY

In the preceding issue of the JOURNAL in an introduction to the subject of Vitamin B, it was pointed out that there were three fractions of significance in human physiology. Vitamin B_1 was considered in the February issue, and it is the purpose of this article briefly to consider riboflavin.

The elucidation of other factors in the Vitamin B complex dates from 1920 when it was demonstrated that there were two separate factors in yeast, a heat stable factor which later proved to be Vitamin B_1, and also a thermolabile factor which was designated as the P-P factor by Goldberger. The P-P or pellagra-preventing factor was identified in America as Vitamin G, and in Europe as Vitamin B_2. Experimental studies on the rat demonstrated that the original Vitamin B_2 or G consisted of two separate factors: riboflavin, which is necessary for growth, and Vitamin B_6 or H, which is a preventive of nutritional dermatosis in rats. As a result, the use of the designation Vitamin B_2 has been abandoned and the newer nomenclature indicates the fractions by the terms riboflavin and Vitamin B_6 or H.

In 1879 Blyth demonstrated the presence of a pigment in milk which he called lactochrome. Little attention was given to this pigment until 1933 when various workers on the continent obtained concentrated preparations of the pigment from milk, liver, heart muscle, egg white and yeast. The pigment was first obtained in crystalline form from milk, and as a result it was designated lactoflavin. However, in this country it is known as riboflavin. The sustance is yellow and has a characteristic green fluorescence.

Kuhn in studying Vitamin B_2 or G noted the parallelism between Vitamin B_2 activity and the intensity of the yellow color and green fluorescence, and discovered that both the vitamin and pigment were destroyed by exposure to light. He assumed that Vitamin B_2 and the yellow pigment were identical and this assumption was proved to be correct. György demonstrated that naturally occurring Vitamin B_2 is composed of two factors, a free portion which will dialyze in the cold, and a combined portion which will dialyze when heated. The same components were demonstrated with pure riboflavin. It was concluded that there is a free portion as well as a part that is bound to a colloidal carrier, and that the pigment is both an enzyme and a vitamin. When the union is broken, however, the properties of an enzyme are lost, and only the vitamin effect remains. Almost simultaneously Korrer and Kuhn accomplished synthesis of riboflavin, a dramatic achievement of bio-

chemistry. It was found to possess the formula $C_{17}H_{20}N_4O_6$.

The vitamin riboflavin is ingested in the food, and forms an ester with phosphoric acid in the intestinal tract. The phosphoric acid ester combines with a protein factor to form the yellow oxidation enzyme which is stored in muscle, liver, kidney, etc. The only proved physiologic rôle of riboflavin is that it has some function in the oxidation processes of all living cells. The necessity for including riboflavin in the diet is that it is an essential component of the yellow oxidation enzyme that cannot be synthesized by the animal cell. The absolute necessity of riboflavin for normal growth has so far been determined only for the rat and the chick. It is uncertain whether it constitutes a growth vitamin in man. A genuine avitaminosis of riboflavin in man is not known. The optimum requirement is thought to be from two to four milligrams daily, but the content of human foods is sufficient for all demands.

It may be concluded that the function of riboflavin in human physiology is unknown other than the fact that it has a rôle in cell respiration. There is no proved therapeutic use of the vitamin.

NORTHWEST MEDICAL CONFERENCE

The Northwest Medical Conference, an unofficial organization composed of representatives from many of the central states, met at the Palmer House in Chicago, Sunday, February 12. About one hundred and fifty physicians were present, of whom twleve were from Iowa. The Missouri State Medical Society was host to the conference, and Dr. Carl F. Vohs, president, and Dr. L. Fernald Foster of Michigan, secretary, deserve much credit for the excellent program.

The first paper dealt with a statewide hospitalization plan for the low income group. This was presented by Mr. Ray McCarthy, director of the plan in Missouri. The plan is a natural outgrowth of non-profit hospital insurance in cities, and can be utilized for statewide coverage. The Farm Bureau organizations and various Women's Clubs can help in presenting the idea to persons in rural areas, and can also be given the responsibility for enrolling members. Individual county requests for coverage were required in Missouri.

Dr. Walter F. Donaldson of Pennsylvania presented the second paper, a discussion of Pennsylvania's public assistance program for the medically indigent. The plan is an outgrowth of the Emergency Relief Administration. In 1938 the legislature adopted an amendment making medical care of the indigent the responsibility of the Public Assistance Department. This was necessary because some of the counties refused to assume the responsibility themselves. The plan was to be made operable in ninety days, and the Public Assistance Department turned to the Pennsylvania State Medical Society for help in organizing it on an efficient and economic basis, believing from past experience that the indigent would receive better service for less money if the service were controlled by the medical profession. The plan is based upon a fee bill, decided upon by the Public Assistance Department and the various healing bodies. No difficulty has been experienced with the osteopaths, but some trouble has been caused by the pharmacists, who refused to take any cuts, and by hospitals which cut fees and tried to set up clinics to do the physician's work at lower prices. Some counties have found the plan satisfactory; others have found the fees too low. However, the plan is one which gives each county the right to adopt its own mode of operation according to local conditions. In spite of the fact that the Technical Committee has been informed of this program in Pennsylvania, and has been invited to inspect its workings, it has made no effort to investigate its possibilities.

The third paper dealt with the possibilities for service of a county medical society. It was presented by Drs. Donald A. Covalt, J. C. Silvers, and L. G. Montgomery of Muncie, Indiana. The county society instituted an intensive program of medical education, dealing with county society programs, postgraduate study, study clubs, training of practical nurses, organization of an outpatient department, and the hiring of a permanent executive secretary. Education of the public was achieved through health exhibits, health education lectures, radio programs, high school health talks, county fair health exhibits, Red Cross educational work, a full time public health officer, and the furtherance of hospital and health insurance.

The final paper of the morning was given by Dr. Theodore R. Meyer, Health Commissioner for St. Louis County. Dr. Meyer gave an excellent paper on the physician's rôle in a public health program, stating that each year public health becomes more and more a summation of personal health. Education, rather than force, is now the motive for health departments. All public health work should be linked to the family physician, and he should be educated in regard to the program and asked to help with it. Dr. Meyer gave specific examples as to how the work in St. Louis County had been organized and conducted, giving some of the results to date.

The morning papers were discussed briefly by

Dr. R. L. Sensenich of Indiana, and by Dr. Parker of the Missouri State Department of Health.

The afternoon program opened with a report of the officers of the organization. Dr. L. Fernald Foster of Michigan was elected president, and Kansas was asked to name a secretary from its membership. A discussion followed as to the personnel of the Northwest Medical Conference, and the name. The conference has grown until it is no longer a northwest conference, and it was felt that any state which wished to attend should do so. The final decision was to leave the matter to the officers for next year, who could enlarge the conference as they wished, and suggest a change in name.

The first paper of the afternoon was given by Dr. Henry A. Luce of Michigan, who spoke as a private citizen on the National Health Conference. Dr. Luce told of the visits of the Committee of Seven of the American Medical Association to Washington to confer with the Interdepartmental Committee. He said that although this Committee had twice been invited to Washington, it had not had its suggestions accepted, and that the government program had been set up and printed before the conference took place. He told of the difficulty experienced in trying to get copies of certain documents from the clerk of the House of Representatives. He stated that the medical profession must educate the people as to the factors involved in the government program, and take the public into its counsel; it must bring all interested agencies into the discussion and cooperate with them. It was not difficult to know that Dr. Luce felt the government was determined to go ahead with its program regardless of the medical profession, and that he was discouraged by the outlook.

Dr. William F. Braasch of Minnesota told of the progress of the survey on medical care, stressing the need for completing it by February 28, and emphasizing the value of many of the reports already received. Dr. R. G. Leland of the American Medical Association spoke on supplementary arrangements for medical care, emphasizing the fact that medical services cannot be bought at wholesale and sold at retail. The provision of good medical care is difficult enough without beclouding the issue at stake. Mr. Theodore F. Warner of Topeka spoke on Kansas' attempts to control cultists. Until 1937 the only method of protecting the people against quacks was by criminal prosecution. In 1937 the legislature passed an injunction bill, by which it is possible to take more effective action. Dr. Olin West spoke briefly on the need for a united front, and discussed the indictment against the American Medical Association, after which the meeting adjourned.

HOSPITAL INSURANCE IN IOWA*

For about a year hospital insurance has been offered to citizens of Iowa principally through the medium of the Iowa Hospital Service Insurance Company. This company at that time had as a majority of its board of directors, hospital executives, members of hospital boards, and three members appointed by the president of the Iowa State Medical Society to represent that organization. The company was progressing satisfactorily, and plans were being formulated to change it into a non-profit hospital service corporation if an enabling act was passed by the present legislature. The sole purpose of the company was to act as a medium whereby individuals could, by small monthly payments, provide for hospitalization when the need arose. As such a company it had the approval of the majority of the members of the medical profession. Its purpose was altruistic, there were no salaried officers, except for clerical help, and all funds were being used as far as possible to provide hospital care for the insured.

At the January meeting of the policy holders of that company, enough votes were cast, largely through proxies, entirely to change the type of the company. The hospital executives and medical members of the board were dropped, and the company branched out as a casualty company selling various types of casualty insurance. Inasmuch as this procedure removed the company entirely from the standing of a purely altruistic organization, and made it no different than any other casualty company, the Medical Economics Committee removed all semblance of support. After the removal of the three appointed medical men and the hospital executives from the board, a letter was sent to many of the old policy holders, printed on the old letterhead which contained the names of the previous officers. This letter announced the change of name of the company, and also the issuance of a new policy covering indemnity for hospitalization, nursing care, medical and surgical fees. It was felt by several of the old officers that this letter, using the names of those men at the head, would give the recipient the impression that the officers whose names appeared at the head were in favor of the present setup and were still active in the administration of the affairs of the company. A definite protest was filed with the company and with the insurance commissioner, requesting a change in the letterhead and that no more letters be mailed under the names of the officers who had been removed. This ends our efforts to help supply hospitalization through such an organization.

*From the Medical Economics Committee.

In Woodbury County the hospitals, medical profession and a group of public-sipirited citizens have organized a mutual insurance company for the sole purpose of providing for the prepayment of hospital expenses. The articles of incorporation have been carefully drawn, and provision is made so that it would be impossible for a small minority, or any individual to have sufficient proxies to take over or change the form of the company. Under the present management and plan, the company should be able to provide a satisfactory service to the community. In the event that the enabling act passes the legislature, this company can, if so desired, be changed and reorganized under the new act.

The enabling act, permitting the formation of non-profit hospital service corporations in Iowa has passed the House with only three dissenting votes, and at this writing is waiting to come up before the Senate. It may possibly be acted upon before this issue of the Journal reaches you, since it is already on the Senate calendar.

The law is patterned after the model law drawn up by the American Hospital Association, and provides that control shall be in a board which shall consist of hospital officials and physicians who are on the staffs of regular hospitals. Thus control is kept in the hands of those who are best able to operate the plan, and whose interests are most involved in its operation. The House of Delegates of the Iowa State Medical Society approved of the principle of non-profit hospital service and requested its legislative committee to assist the hospital association in developing a bill, and in attempting to secure its passage. If it is passed, the hospital association of the state plans to proceed at once with the organization of the type of corporation permitted under the law. It is anticipated that a central state company will be organized in order to reduce overhead and spread the risks over the state, and that local units, to a great extent autonomous, will be formed in the various larger cities of the state to supply those cities and the areas surrounding them.

Provision for the prepayment of hospital bills is one very important step in the direction of assisting those individuals in the low income group to provide for their expenses in case of need for medical care. Hospitalization has been estimated as being between twenty and thirty per cent of the total medical bill of the country. Provision for this proportion of the total expense will make the payment of the balance of the expenses much easier, and will remove to some extent the oft claimed need for some method to provide medical and allied services at public expense for a large group of the population.

SPEAKERS BUREAU ACTIVITIES

The Second Councilor District, in cooperation with the Speakers Bureau of the Iowa State Medical Society, will conduct a postgraduate course in general therapeutics, starting Tuesday, March 7, in Mason City, at the Hotel Hanford. The program which will be presented is as follows:

Mar. 7 Medical Management of Gallbladder Disease. Diagnosis and Treatment of Nonmalignant Ulcers of the Stomach and Duodenum
Clifford J. Barborka, M.D., Chicago

Mar. 14 Physiotherapy in Arthritis
John S. Coulter, M.D., Chicago

Mar. 21 The Importance of Biopsy in the Diagnosis of Cervical Lesions
Leon S. McGoogan, M.D., Omaha

Mar. 28 Poliomyelitis
George E. Robertson, M.D., Omaha

April 4 The Diagnosis and Treatment of Common Diseases of the Skin. Classification, Diagnosis and Treatment of Eczema
Ruben Nomland, M.D., Iowa City

April 11 Practical Consideration of Some Diseases of the Colon and Rectum
R. Russell Best, M.D., Omaha

Hours: 6:00-7:00 p. m. Dinner
7:00-9:00 p. m. Lecture
(Dinner—75 cents)

The fee for the series of six lectures will be $7.50; individual lectures will be $2.00. All physicians, assistants and nurses wishing to enroll for the course should notify Dr. Jay E. Houlahan, local chairman, or write the Speakers Bureau.

* * * * *

Tentative plans are now being made for a postgraduate course in general therapeutics to be held in Algona. This course will run for six weeks, and will begin the latter part of March. A complete outline of the course will appear in the April issue of the Journal.

RADIO SCHEDULE

WOI and WSUI—Tuesdays at 4:00 p. m.

Mar. 14 Injuries (4-H Club Series), A. F. O'Donoghue, M.D.

Mar. 21 Drama in the Modern Treatment of Pneumonia, Herman J. Smith, M.D.

Mar. 28 Care of Sickness (4-H Club Series), W. L. Bierring, M.D.

April 4 Medical Specialists, J. G. Grant, M.D.

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—MRS. DEAN W. HARMAN, Glenwood
Secretary—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City
Treasurer—MRS. WILLIAM R. HORNADAY, 3011 High Street, Des Moines

GROUP HOSPITALIZATION

Many requests have come from members of the Woman's Auxiliary to the Iowa State Medical Society for accurate information pertaining to legislative matters now pending in the Legislature. In an effort to meet these inquiries and so that our members can be correctly informed as to the medical profession's stand on these questions, the Committee on Public Policy and Legislation of the Iowa State Medical Society has prepared the following statement explaining the problem of group hospitalization and the advisability of changes in the state laws to provide for more adequate hospital care for the low and average income groups.

"The Iowa State Medical Society and the Iowa Hospital Association are at present endeavoring to secure the passage of an Enabling Act at this year's session of the State Legislature, which will authorize the organization of non-profit group hospitalization plans in the state of Iowa.

"Group hospitalization may be termed as a plan which provides an opportunity for individuals and their dependents to budget, with other individuals, hospital care at the low cost of a few cents per day. The problem of providing hospital care to the low and average income groups is ever increasing. In accordance with the experiences of non-profit plans now in operation throughout the country, this problem is gradually being solved.

"The present relationship between the patient and the doctor, the patient and the hospital, or the doctor and the hospital, would not be disturbed in any way, since the subscriber would have free choice of physician or surgeon and any participating hospital.

"Enabling Acts have been passed thus far in twelve states: New York, Massachusetts, Pennsylvania, Rhode Island, Maryland, Georgia, Alabama, Mississippi, Illinois, California, New Jersey and Kentucky. No plan, organized on a non-profit basis and in accordance with the recommendations of the American Medical Association, the American College of Surgeons and the American Hospital Association, has ever failed.

"More than 3,000,000 subscribers are now enrolled in such plans, with the city of New York heading the list with 1,250,000. The plan in operation in the Twin Cities, Minneapolis and St. Paul, comes second on the list with more than 250,000 subscribers, almost one-third of the total population of those two cities.

"The bill before the Legislature was presented to the House of Representatives, unanimously recommended for passage by the Committee on Public Health, and was passed by the House on February 23, by a vote of 78 to 3. We hope that it will meet with the same gratifying success in the Senate."

As has been stressed so many times before, the education of the public in regard to health and medical problems must go forward at all times. Members of our Auxiliary who are active in local community and civic affairs are in an enviable position to assist the medical profession in this task, and it is hoped that these explanatory notes on group hospitalization will prove worthwhile in accomplishing this goal.

DALLAS-GUTHRIE AUXILIARY

The Woman's Auxiliary to the Dallas-Guthrie Medical Society held a luncheon meeting, Thursday, January 19, at the Maples Tea Room in Perry. The president, Mrs. Howard F. Clark of Stuart, presided at the business meeting.

Eighteen members responded to roll call by reporting Healthograms from *Hygeia*. The Auxiliary voted to contribute the usual five dollars to the essay contest. The following officers were elected to serve the organization during 1939: Mrs. W. A. Seidler of Jamaica, president; Mrs. M. H. Brinker of Yale, president-elect; Mrs. C. E. Mershon of Adel, first vice president; Mrs. W. V. Thornburg of Guthrie Center, second vice president; Mrs. H. E. Haymond of Perry, secretary; and Mrs. C. A. Nicoll of Panora, treasurer.

The program for the afternoon consisted of articles chosen and reported from *Hygeia*. Mrs. Brinker summarized effectively an account of acute rheumatic fever in children, and Mrs. Nicoll gave interesting excerpts from medical news of the month.

Mrs. H. E. Haymond, Secretary

SOCIETY PROCEEDINGS

Black Hawk County

Clifford J. Barborka, M.D., professor of medicine, Northwestern University Medical School, was guest speaker for the Black Hawk County Medical Society, Tuesday, February 21, at the regular meeting held in Waterloo. Dr. Barborka spoke on Medical Management of Gallbladder Disease.

Cerro Gordo County

The regular meeting of the Cerro Gordo County Medical Society was held Thursday, February 16, at the Hotel Hanford in Mason City, with James F. Weir, M.D., of The Mayo Clinic, Rochester, furnishing the scientific program. His subject was Diseases of the Gallbladder and Liver.

Des Moines County

The Des Moines County Medical Society entertained Howard K. Gray, M.D., of The Mayo Clinic, Rochester, at the meeting held in Burlington, Tuesday, February 14. Dr. Gray addressed the group on Surgery of the Stomach and Duodenum. Another feature of the program was a talk by E. C. Sage, M.D., of Burlington, director of the county health unit, explaining the aims and accomplishments of the unit.

Dubuque County

Gordon F. Harkness, M.D., of Davenport was guest speaker for the Dubuque County Medical Society at the regular monthly meeting held Tuesday, February 14. He spoke on the subject of Deafness.

J. J. Mueller, M.D., Secretary

Fayette County

The Fayette County Medical Society met Tuesday, February 7, at the Mealy Hotel in Oelwein, for a dinner meeting. The speaker of the evening was Arthur E. Perley, M.D., of Waterloo, who showed and discussed the diagnosis and treatment of many interesting and unusual cases from a roentgenologic viewpoint. Members were informed regarding the gas bacillus infection survey, the industrial accident and disease survey, and the advisability of reporting such cases as required by the State Department of Health. The new Farm Security Administration program was read and tabled for future discussion. The proposed laws regarding syphilis in relation to marriages and pregnancies were discussed and a motion was carried that our state representative and senator be informed that our society urged passage of these bills.

H. H. Wolf, M.D., Secretary

Greene County

At the January meeting of the Greene County Medical Society held Thursday, January 5, Arch S. McMillen, M.D., of Fort Dodge, presented an illustrated lecture on Different Phases of X-Ray Diagnosis. The February meeting was addressed by Verl A. Ruth, M.D., of Des Moines, Thursday, February 16, on Fractures of the Lower Extremity.

John R. Black, M.D., Secretary

Hardin County

Ernest E. Shaw, M.D., of Indianola, was a guest of the Hardin County Medical Society, Wednesday, February 8, at a meeting held in Iowa Falls. Dr. Shaw explained the workings of the Farm Security Administration Program.

Jasper County

The regular monthly meeting of the Jasper County Medical Society was held Tuesday, February 7, at the Skiff Memorial Hospital in Newton, with Verl A. Ruth, M.D., of Des Moines, addressing the organization on Back Injuries.

Johnson County

The following scientific papers were presented for members of the Johnson County Medical Society at the meeting held Wednesday, February 1, at the Hotel Jefferson in Iowa City: The Laboratory Diagnosis of Pneumonia, I. H. Borts, M.D.; The Treatment of Pneumonia, Horace M. Korns, M.D.

R. J. Prentiss, M.D., Secretary

Linn County

John T. McClintock, M.D., head of the department of physiology, State University of Iowa, College of Medicine, was the speaker for the meeting of the Linn County Medical Society held Thursday, February 9. He spoke on Physiology of the Gastro-Intestinal Tract. Fred W. Mulsow, M.D., of Cedar Rapids, opened the discussion of the paper, and presented a comparative analysis of cancer and gastric ulcer. H. M. Ivins, M.D., also of Cedar Rapids, reviewed the medical relief work in Linn County during the past three years.

The next meeting of the society will be held Thursday, March 30, at which time James Robert McCord, M.D., professor of obstetrics, Emory University, Atlanta, Georgia, will be entertained by the organization.

T. F. Hersch, M.D.,
Chairman Program Committee

Lucas County

Newly elected officers of the Lucas County Medical Society are: Dr. H. D. Jarvis of Chariton, president; Dr. A. L. Yocom of Chariton, vice president; Dr. George F. Niblock of Derby, secretary and treasurer; Dr. R. E. Anderson of Chariton, delegate; and Dr. Jarvis, alternate delegate.

G. F. Niblock, M.D., Secretary

O'Brien County

The annual meeting of the O'Brien County Medical Society was held Thursday, February 2, in Primghar, with the following results: Dr. G. C. Oldag of Paullina, president; Dr. J. A. Wagner of Primghar, vice president; Dr. W. S. Balkema of Sheldon, secretary and treasurer, and Dr. W. R. Brock of Sheldon, delegate.

Sac County

The Sac County Medical Society met at the Park Hotel in Sac City, Friday, January 13, and elected the following officers to serve during 1939: Dr. G. H. Bassett of Sac City, president; Dr. H. N. Neu of Sac City, secretary and treasurer; Dr. L. B. Amick of Sac City, delegate, and Dr. S. J. Deur of Lake View, alternate delegate. After the business session a paper on Management of Common Skin Disorders was presented by W. R. Turner, M.D., of Fort Dodge.

H. N. Neu, M.D., Secretary

Scott County

Fremont A. Chandler, M.D., assistant professor of orthopedic surgery, Northwestern University Medical School, furnished the scientific program for the Scott County Medical Society at a meeting held in Davenport, Tuesday, February 7, speaking on Recent Developments in the Treatment of Diseases and Injuries of the Spine.

P. E. Gibson, M.D., Secretary

Union County

Recently reported 1939 officers of the Union County Medical Society are: Dr. A. S. Beatty, president; Dr. C. C. Rambo, vice president; Dr. C. E. Sampson, secretary and treasurer; Dr. J. A. Liken, delegate, and Dr. Sampson, alternate delegate. All officers are of Creston.

C. E. Sampson, M.D., Secretary

Wapello County

The Wapello County Medical Society and the Ottumwa Rotary and Kiwanis Clubs sponsored a joint medical meeting held in Ottumwa, Monday, February 6, to which were invited the local druggists, veterinarians, nurses and dentists. Speaker for the occasion was W. W. Bauer, M.D., of Chicago, representing the American Medical Association.

Warren County

Dr. M. B. Cunningham of Norwalk was recently elected president of the Warren County Medical Society. Other officers include Dr. Rose Butterfield of Indianola, vice president; Dr. E. E. Shaw of Indianola, secretary and treasurer, and Dr. C. A. Trueblood of Indianola, delegate.

Woodbury County

The February meeting of the Woodbury County Medical Society was held Friday, February 17, at the West Hotel in Sioux City, with the following scientific program: Erysipeloid Infection of Animal Origin, John W. Schwartz, M.D., of Sioux City, and Equine Encephalomyelitis in Human Beings, R. N. Larimer, M.D., also of Sioux City.

W. H. Gibbon, M.D., Secretary

Upper Des Moines Medical Society

Dr. Harold W. Powers of Emmetsburg was named president of the Upper Des Moines Medical Society at the winter meeting of that organization held in Estherville, Thursday, February 16. Other officers are: Dr. Thomas H. Johnston of Spencer, vice president, and Dr. O. H. Miller of Estherville, secretary and treasurer.

PERSONAL MENTION

Dr. Donald C. Koser, on the staff of the Cherokee State Hospital, addressed the Cherokee Rotary Club, Monday, February 21, on "Recent Advances in Fever Therapy".

Dr. John C. Parsons of Des Moines, spoke before the Jasper County Parent-Teacher Association, at a regular meeting held in Colfax, Tuesday, February 7, on "Tuberculosis".

Dr. Joseph H. Holleman, who has practiced during the past year in Holstein, has left that locality and moved to Springfield, South Dakota.

Dr. Harold W. Morgan of Mason City, was guest speaker for the Lake Mills Lions Club, Tuesday, February 7, taking for his subject, "Blood Tests", and stressing particularly the necessity of tests for intoxication.

Dr. Lester Leserman of Rolfe spoke on "Socialized Medicine", at a meeting of the Rolfe Fellowship Forum, held in his home, Thursday, January 26.

Dr. R. A. Jacobsen of Exira, who has practiced in that city for almost thirty-five years, has disposed of his practice to Dr. Peder J. Bursheim, and is retiring. Dr. Bursheim has been engaged in the practice of medicine for several years at Lake Benton, Minne-

sota. He is a graduate of the Keokuk Medical College, College of Physicians and Surgeons.

Dr. Grace Schermerhorn of Clinton, addressed the Maquoketa Women's Club on Friday, February 17, at a meeting held in the Library Club Rooms in Maquoketa. She spoke on "Cancer".

Dr. C. A. Trueblood of Indianola, led a forum discussion of "The National Health Program", for a meeting held at Ginder School, east of Ackworth, Thursday, February 16.

Dr. Fred W. Bailey, after practicing medicine in Cedar Rapids for thirty years, is retiring, and plans to go to Manhasset, Long Island, New York.

Dr. Carl F. Jordan of the State Department of Health, Des Moines, spoke before the Belle Plaine Rotary Club, Tuesday, January 31, on "Recent Advances in Preventive Medicine".

Dr. E. D. Plass of the State University of Iowa. College of Medicine, Iowa City, was guest speaker for the Nemora Club, at a meeting held in Oxford, Wednesday, February 22. His address was on the general subject of "Cancer".

Dr. William D. Yavorsky has located in Cedar Rapids for the practice of medicine, with offices at 803 Higley Building. He was graduated in 1935 from the State University of Iowa, College of Medicine, Iowa City, and completed two years of interneship at the Medical Center in Jersey City, New Jersey. He has taken postgraduate work in surgery and gynecology, and comes to Cedar Rapids from Belle Plaine, where he has been taking care of the practice of his father, Dr. George W. Yavorsky while the latter was on a vacation trip.

Dr. C. H. Fee of Denison, delivered two addresses on "Social Hygiene", as a part of the national observance of Social Hygiene Day. One was given Tuesday, February 7, at the High School Auditorium in Denison, for boys and their parents; and the other Wednesday, February 8, for girls and the parents.

Dr. Charles J. Aucreman, member of the Methodist Hospital Staff in Indianapolis, Indiana, has located in Muscatine, where he will enter the practice of medicine. Dr. Aucreman was graduated in 1937 from the College of Medical Evangelists, Loma Linda-Los Angeles, California, and interned at the Los Angeles County Hospital.

MARRIAGES

Miss Viola Ross of Doon and Dr. H. W. Schoon of Sibley were married Saturday, February 11, in Spirit Lake. After a wedding trip to Chicago, Dr. and Mrs. Schoon will return to Sibley, where Dr. Schoon has been practicing for the past seven years.

The marriage of Miss Carleen Steckelberg of Lincoln, Nebraska, and Dr. Russell I. Williams of Creston, took place Saturday, February 25, in Lincoln, Nebraska. The young couple will live in Creston, where Dr. Williams has located for the practice of medicine.

DEATH NOTICES

Baker, Howard Newell, of Pierson, aged fifty-seven, died suddenly February 8, following a stroke. He was graduated in 1905 from The Hahnemann Medical College and Hospital, Chicago, and at the time of his death was a member of the Woodbury County Medical Society

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Duffin, Charles Willis, of Guttenberg, aged seventy-nine, died January 19, after a short illness. He was graduated in 1881 from Rush Medical College, University of Chicago, and at the time of his death was a life member of the Clayton County and Iowa State Medical Societies.

Fraser, Leonard Edward, of Iowa Falls, aged fifty-eight, died February 4, in Ellsworth Memorial Hospital. He was graduated in 1905 from Keokuk Medical College, College of Physicians and Surgeons, and at the time of his death was a member of the Hardin County Medical Society.

Griffis, Arthur Alanson, of Tipton, aged seventy-seven, died February 10, after an illness of several weeks. He was graduated in 1898 from the Cleveland-Pulte Medical College, and at the time of his death was a member of the Cedar County Medical Society.

Harper, James Asbury, of Greenfield, aged seventy-one, died February 9, of heart disease. He was graduated in 1896 from the Bellevue Hospital Medical College, New York, and at the time of his death was a member of the Adair County Medical Society.

McEwen, Earle, of Mason City, aged eighty-one, died February 17 after an extended illness. He was graduated in 1881 from The Hahnemann Medical College and Hospital, Chicago, and at the time of his death was a life member of the Cerro Gordo County and Iowa State Medical Societies.

Vander Wilt, Walter, of Rock Rapids, aged forty, died February 7, of lobar pneumonia. He was graduated in 1925 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Lyon County Medical Society.

LOCUM TENENS FOR SUMMER MONTHS

Our attention has been directed to the approaching problem of summer vacations, and the advisability and necessity of physicians securing competent men to conduct their practices during their absence. In view of the existing medical practice act in Iowa, every physician should realize the importance of leaving his practice in the hands of a man who not only is capable of giving adequate service, but one who is also licensed to practice medicine in the state of Iowa.

Dr. E. M. MacEwen, Dean of the College of Medicine, State University of Iowa, Iowa City, has extended a gracious offer to cooperate with any members of the Iowa State Medical Society, who desire this service. He is in a position to know those young men best qualified to fill these vacancies, and can in many instances supply men who have had two or three years of training beyond the regular medical course. It is suggested that physicians throughout the state who may welcome such assistance communicate with Dr. MacEwen at an early date, so that he can arrange for assistant resident physicians or resident physicians on the University Hospitals staff to take care of these practices during the summer months.

MAYO FOUNDATION PROGRAM

A special program of lectures and demonstrations in surgery and medicine will be held in Rochester, Minnesota, under the direction of The Mayo Foundation from April 11 to 15, inclusive. Mornings will be devoted to surgical and medical clinics. In the afternoons and evenings presentations of various surgical subjects will be made and symposiums will be conducted on heart disease, arthritis, gynecology, gastro-enterology, oxygen therapy, pneumonia and bronchial asthma. Visiting physicians are invited to attend.

SYMPOSIUM ON THE VIRUS AND RICKETTSIAL DISEASES

The Faculty of the Harvard School of Public Health has announced a short course of lectures, clinics and demonstrations on the virus and rickettsial diseases, with special emphasis on their public health significance, to be held at the school during the week of June 12 to 17, 1939. Lectures on the etiology, epidemiology and methods of control of these diseases, given by members of the faculties and by former students of the Harvard School of Public Health and of the Harvard Medical School, will occupy five mornings. Special clinics and demonstrations will be given each afternoon. In some instances these demonstrations will be continued through the week, so that all members of the symposium can attend. On the last morning, a panel discussion will be held on the three main topics presented in the symposium, encephalitis, rickettsia and respiratory diseases.

The fee for the course will be twenty-five dollars, payable at any time up to June 12. Enrollment, however, should be arranged before June 1, since facilities for many of the clinics and demonstrations are limited. The lectures will be published later in a single volume, which will be sent to each person who has registered for the course. Further information may be secured by writing to the secretary of the School of Public Health, 55 Shattuck Street, Boston, Massachusetts.

CHILD HEALTH DAY, MAY 1, 1939

Child Health Day activities are sponsored by the Children's Bureau of the United States Department of Labor, in accordance with the congressional resolution of May 18, 1928, which authorized the President to proclaim May Day as Child Health Day. The slogan for 1939 is: "The health of the child is the power of the nation." An announcement from the Children's Bureau states this year's objective to bring to the attention of each community:

1. The importance to the child's health, development and well-being throughout life, of proper food, rest, exercise, medical care and protection against disease.

2. The ways of informing parents and others how child health may be safeguarded.

3. The means whereby such safeguards may be made available for all children.

State health officials in the various states appoint the committee and May Day chairman, and each state is allowed to conduct the type of program best suited to the needs of the particular locality in the effort to bring the above mentioned points to the attention of the community. Further plans for Iowa's May Day program will be announced in the April issue of the JOURNAL.

POSTGRADUATE COURSE IN NEUROPSYCHIATRY

For the fifth consecutive year, the psychiatric staff of the Menninger Clinic, Topeka, Kansas, will offer a week's postgraduate course in neuropsychiatry in general practice, from April 17 to 22. This practical presentation of dynamic psychiatry through lectures and case presentations has been attended by physicians from nineteen states in the past four years. Enrollment is limited to thirty. Address inquiries to Dr. Robert P. Knight, chairman.

PREVALENCE OF DISEASE

	Jan. 1939	Dec. 1938	Jan. 1938	Most Cases Reported From
Diphtheria	40	46	22	Black Hawk, Webster, Scott
Scarlet Fever	528	403	993	Polk, Black Hawk, Scott
Typhoid Fever	5	27	2	Polk, Pottawattamie Sioux, Woodbury, Johnson
Smallpox	155	59	243	Marshall, Scott, Shelby
Measles	612	531	226	Woodbury, Mills, Sioux
Whooping Cough	73	75	170	Woodbury, Dubuque
Cerebrospinal Meningitis	1	2	8	Osceola
Chickenpox	558	308	517	Dubuque, Woodbury, Black Hawk
Mumps	143	50	54	Decatur, Bremer, Polk
Poliomyelitis	0	1	1	(For State)
Tularemia	16	82	3	(For State)
Tuberculosis (Pulmonary)	97	41	52	(For State)
Undulant Fever	4	8	7	(For State)
Gonorrhea	122	150	162	(For State)
Syphilis	230	246	301	(For State)

History of Medicine in Iowa

Edited by the Historical Committee

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Dr. John T. McClintock, Iowa City
Dr. R. T. Lenaghan, Clinton
Dr. Tom B. Throckmorton, Des Moines
Dr. Walter L. Bierring, Des Moines
Dr. William Jepson, Sioux City

Ezra Stiles Ely—Benefactor of Jefferson Medical College

Tom Bentley Throckmorton, M.D., F.A.C.P.* Des Moines

The guns of Fort Sumpter had been silenced by a defiant Southland. Everywhere the atmosphere was impregnated with that intangible something which shortly was to arraign brother against brother, father against son, neighbor against neighbor and the South against the North. The inevitable at last had occurred. All over the nation, men were hastening to join the colors. The stirring strains of martial airs were heard on every hand. Practically every community had its group of self-appointed guardians of the law which took upon itself the duty of weeding out the northern sympathizers who resided in the South, and the copperheads who lived in the North. The Civil War was a reality. It was in the midst of these disturbing times that the spirit of Ezra Stiles Ely winged its flight to that house not made with hands, eternal in the heavens. He died June 18, 1861, and with his passing the final chapter of his life's work was closed. His life had been a busy one, a full one, overflowing with the joys which affluence and position had provided and with the satisfaction of tasks well done; but it also was filled with the bitterness which comes to one who is obliged to drink from the cup whose contents are tinctured with sorrow, disappointment and disillusionment. Well may it be said of him, however, that he had fought a good fight, he had finished his course, he had kept the faith, and that he had gone to receive his well earned crown of righteousness. However, with his going he did not cease to be existent, for he left behind him many acts of kindness, many deeds of generosity, many evidences of charity, and, above all, a monument which has existed for 114 years, and which should continue to live throughout the coming ages. The enduring monument he helped to erect is the Jefferson Medical College of Philadelphia. The Rev. Mr. Ely played the savior's part at a crucial moment in the early life of this institution. Without his wise counsel and financial support the college, in all probability, would have gone out of existence while it was yet wearing the swaddling clothes of infancy. In order then that a better understanding may be had of the manner in which he became a benefactor of the medical school, I feel it would not be amiss to turn back the pages of time and glance at some of the early events which are there recorded and which later cast the shadows which foretold so clearly what was to follow.

The aftermath of the Revolutionary War was still being felt by a victorious people. The New England states were doing their best to help in the constructive efforts which had followed the struggle for independence. It was in these exciting times that a babe was born, June 13, 1786, in the home of the Rev. Zebulon Ely, a Presbyterian minister, residing in Lebanon, Connecticut. Rejoicing that the child was a boy, the father named it after one whom he greatly admired, his preceptor, Ezra Stiles, a famous president of Yale University. Seventeen years later, Zebulon saw his son graduated from his alma mater and become one of the sons of old Eli. In fact the young man represented the third generation of the family to be graduated from that institution and was the seventeenth individual of blood-ties who had received instruction within its halls. Ezra continued his studies in theology and within a year, thanks to the guiding hand of his father, he became an ordained Presbyterian minister. His first charge was at Colchester, Connecticut. Here he ministered to his flock for two years. He then became interested in mission work and went to New York City where he became Chaplain of the New York City Hospital and Almshouse. A

* Jefferson Medical College, Class of 1909.

record of some of the work he did during these years of service is found in a book he published under the name "Visits of Mercy." The manuscript was written while he was a stated preacher to the hospital and almshouse in the city of New York. The book, which went through several editions, reminds one of a compilation of case histories, except that it deals with spiritual, rather than with physical, problems.

It was while he was carrying on his missionary work in New York City that he made the acquaintance of Captain Benjamin Wickes, an elder of Old Pine Street Church in Philadelphia. Evidently the elder was favorably impressed by the young minister, so much so that through his good graces the Reverend Ely was invited to fill the



Ezra Stiles Ely, A.B., D.D., as he appeared when he came to Philadelphia in 1814.

pulpit one Sunday while he was sojourning in the city. Thus came about his introduction to Philadelphia and to Old Pine Street Presbyterian Church, an institution formed in 1768. Some years later, when Archibald Alexander, D.D., vacated the pulpit of Pine Street, it was only natural for the leaders in the church to turn to the promising young chaplain of New York City as a prospective candidate to fill the vacancy. After some trials and tribulations, both to the invited minister and to the Pine Street congregation as well, Ezra Stiles Ely came to Philadelphia and was installed, September 7, 1814, as minister of the Old Pine Street or Third Presbyterian Church of Philadelphia. He was the fifth man to serve in this capacity. He became moderator of the General Assembly in 1828. Just as his birth had occurred during the Revolutionary War period, so did his work in Philadelphia begin during the second struggle with England, the War of 1812. It has been said of him that he



Old Pine Street Church prior to 1837.

came to his new charge splendidly equipped for the work before him. Born of the best New England stock, blessed with a commanding presence, both intellectual and spiritual, finely educated, experienced far beyond his years, and in manners thoroughly a gentleman, he was fully prepared at the age of twenty-eight years to take his place in any society or in any assembly of his brethren. Thus began the pastorate of Ezra Stiles Ely in Philadelphia. Thus was laid the groundwork upon which later was founded the permanency of the Jefferson Medical College.

Dismissing for a moment the life of Ezra Stiles Ely and Old Pine Street Church, let us now turn our attention from spiritual affairs to medical affairs in the old Quaker City. Just as Cambridge, Massachusetts, has the honor of being the home of the first university to be established in



Old Pine Street Church as it stands today. Note the old burial ground.

this country—Harvard University—so to Philadelphia goes the honor of establishing the first medical school in the new world. The individual honors go to Dr. John Morgan, a native of Philadelphia, for it was he who founded, in 1765, the

Medical School of the College of Philadelphia. He became the first medical professor in America. The school eventually became the Medical Department of the University of Pennsylvania. The first commencement of this, our first medical school in America, was held June 21, 1768. This is the same year in which the Pine Street Presbyterian Church was formed. Little did the faculty and trustees of the medical school or the trustees, elders and members of the congregation of the Pine Street Church dream of the rôle which each was to play as causative agents in the founding of a new medical school in the city of Philadelphia in the years to come.

For more than half a century the Medical School of the College of Philadelphia—or its



George McClellan, M.D., founder of Jefferson Medical College.

successor, the University of Pennsylvania—had no competitor in the field of medicine. It is true that several attempts to establish a new medical school had been made, but each time the opposition was too strong and all such efforts came to naught. However, it remained for Dr. George McClellan to break the political ice which had so definitely defied all previous attempts of men in their endeavors to establish a new medical school. As his name would indicate, he was of Scotch-Irish descent. This at once stamps the ambitious young doctor as coming from that stock which does not bow before unjust opposition. In fact, one well might say of him that he must have taken for his motto, "Where there is a will, there is a way." His actions, at least, so indicated. Realizing that it would be impossible to secure a charter for an independent medical school, McClellan set about to see how he could overcome the obstacles before which all other similar efforts had fallen. The manner in which he accomplished his purpose brings out the real strategy and generalship which were innate to his being. His fertile brain conceived the idea of launching a program which in the end would secure for himself and others a charter for a new medical school. His church affiliation, or at least his acquaintanceship among the Scotch-Irish folk of the town, was with people who professed the Presbyterian faith. This contact gave him entrée to the trustees of the Jefferson College, located at Canonsburg, Washington county, Pennsylvania. This institution, originally founded as a private school under Scotch-Presbyterian influence, was the first chartered literary institution west of the Alleghany mountains. McClellan reasoned that if he could get the sanction of the Board of Trustees of the Jefferson College to establish a medical department of the school in Philadelphia, he might be successful in obtaining from the state legislature a charter for the new project. With this thought in mind he laid his plans before the trustees of the Jefferson College in Canonsburg, in June, 1824. The outcome was that the parent college adopted the articles of union authorizing the establishment in the city of Philadelphia of a Medical Faculty, as a constituent part of Jefferson College, to be styled the *Jefferson Medical College*. Among other things the trustees expressly stipulated that the medical school should have no claims whatsoever on the funds of Jefferson College. Thus was the fledgling institution created, but its financial resources were purely problematical.

With the die cast and the Rubicon crossed, McClellan and his associates immediately began to make preparations for the opening of the spring term of the Medical Department of Jefferson College. Thus it came about that the hall of the Jefferson Medical School was opened March 8, 1825. The fall term began the following October. By this time 109 students had matriculated. This was only the beginning. What was the end to be? With the fall and winter months passed and with spring rapidly approaching the all consuming question among both faculty and students was whether the school could legally graduate the senior class. Here again the strategy of McClellan was unfolded when the time to strike was propitious. In the spring of 1826, while the state legislature was in session at Harrisburg, he left Philadelphia early one morning, traveling by means of horse and sulky. Reaching Lancaster during the night, a distance of some sixty miles

from Philadelphia, he secured a fresh steed and continued his journey, arriving in Harrisburg the following morning. The entire distance traversed by the intrepid Scotsman was almost one hundred miles. He and his stanch Presbyterian friends presented their claim to the legislators. Evidently their prayer fell on attentive and friendly ears for, *mirable dictu*, their efforts were rewarded with success. On April 7, 1826, the bill which gave life to the institution in Philadelphia was enacted by the legislature and approved by Governor Andrew Schultze. It may be of interest to learn that George McClellan, once the battle was won, lost no time loitering in Harrisburg. On the contrary, he started the return trip to the place from whence he had come, driving over the dark and lonely roads with a light and courageous heart. He too had fought a good fight; he too had kept the faith, and now he was on his way back to finish his course. Thus it came about that the first class, twenty in number, was granted diplomas by the Jefferson Medical College just a week after Governor Schultze had signed the enabling act.

Just as the parents of a new born babe, overjoyed because of the new arrival, later are faced with the stern reality that something more tangible than love is needed to sustain its life, so did the first blush of joy disappear as the faculty of the newly created medical school began to realize that something more than good will was needed to keep the institution alive. To express the thought in present day phraseology the school had been built on a shoestring. Its faculty was young and ambitious. McClellan, its prime mover, was only twenty-four years of age; but youth and ambition cannot succeed without financial backing. Hence in 1827 the momentous question of how to acquire financial aid, like Banquo's ghost, arose to haunt and plague the faculty. The college had no definite home. Lectures were being given in a makeshift place on Prune Street, now Fifth and Locust streets. Personal notes of the professors were pledged to help tide over the trying and difficult days; but these methods could not continue indefinitely. Again the resourcefulness of the dominating spirit of the Jefferson Medical College asserted itself. Again the master mind of McClellan became evident. When the bill, for which McClellan and his friends had labored, was enacted into law it contained a clause authorizing the Board of Trustees of the Jefferson College at Canonsburg to elect ten additional trustees, "who may be residents of the city or county of Philadelphia." It was only natural that the "additional trustees", which the board authorized, would be friends of McClellan and his associates. It is not strange then that among the number appointed on the Board of Additional Trustees to serve the Jefferson Medical College was Ezra Stiles Ely, pastor of Old Pine Street Presbyterian Church, which was located between Fourth and Fifth streets, about two blocks distant from the college. In fact this learned gentleman served as secretary of the board for some years. Who other than the faculty would know more of the trials and tribulations of the medical school than its local trustees? Thus did Reverend Ely come face to face with the school and with its problems. It was he who listened with a sympathetic ear when the subject of a new college building first was mentioned in 1827. The medical school had no endowment. The act creating it stipulated expressly that it should have no claim on the funds of the parent institution. The Jefferson College at Canonsburg gladly gave it birth but the hardheaded Scots who served as trustees saw to it that neither they nor the school they represented were made liable for its after-care. Neither the faculty nor the Board of Additional Trustees was in a position to assume the responsibility of purchasing a lot and erecting thereon a suitable building in which to house the activities of the medical school. When it seemed that all must fail, when the hour of greatest darkness and despair crept over the Jefferson Medical College and threatened to engulf it within the inky bosom of oblivion, a ray of hope, like a beam of light from the morning star, pierced the gloom and spread its beneficent influence upon the troubled faculty and trustees. Ezra Stiles Ely came forward and saved the day. Of all persons concerned about the future of the school, he was the one who was best equipped mentally and financially to come to its aid. He generously proposed to assume the responsibility of erecting a new building. Accordingly, in March, 1827, the Board of Additional Trustees of Jefferson College agreed to pay the Rev. Dr. Ely a sum of one thousand dollars a year for a term of five years, providing he would erect a Medical Hall for the use of the Medical School. Reverend Ely immediately set about to fulfill his agreement. By May he had purchased a lot on Tenth Street above Walnut—what is now Tenth and Sansom streets—and by the following August the new college building was ready for use. This was the home of Jefferson Medical College between the years of 1828 and 1846. On the same site stands today the Jefferson Medical College Hospital, which was erected about a third of a century ago. This is the only building remaining of the ones in use when I was a student in the college more than thirty years ago.

There is little more to be said about Ezra Stiles Ely and of his connection with the Jefferson Medical College by virtue of his membership on the Board of Additional Trustees of the Jefferson College at Canonsburg. There can be no question of the influence he exerted in helping to establish and maintain the medical school. His willingness to finance the college at a time when its affairs were in an unsatisfactory condition, his loyal friendship, honest encouragement and financial aid, just at the psychologic moment when the clouds of despair hung ominously over the institution, were the means which turned the tide of probable disaster into perfect success. True, someone else might have done as much for the school; but we have no proof that such a person existed. If he did, he failed to come forward and make himself known. Consequently more



Home of Jefferson Medical College from 1828 to 1846. Built from funds supplied by Rev. Ezra Stiles Ely.

than 16,000 alumni of Jefferson Medical College owe a debt of gratitude to the Rev. Dr. Ely for making it possible for them to be graduated from such a fine and honorable medical school. If he had left nothing behind him but this one deed, that alone would insure a conspicuous place for his name among the records in the archives of the college and cause it to be remembered as long as the medical school, whose interests he cherished and whose life he saved, remains. However, his life's work also left an indelible impression on another old Philadelphia institution; namely, Old Pine Street Church. His connection with this institution, like that with the Jefferson Medical College, marks him for all time as an outstanding man, a good citizen, a devoted minister, an exemplary character and a benefactor of humanity. His life began during the stress and strain of the post-Revolutionary War period. His introduction to the ministerial work in Philadelphia, which he carried on for more than twenty years, was during the War of 1812. His closing days on earth were amid the beginnings of the Civil War. How fitting it is that such was to be for a man who carried on so militant a battle for the things he thought were right and just and for the church which to him was his very existence. Truly it may be said of him that whatever evil he may have done was interred with his bones while the good which he did still lives after him.

The story of Ezra Stiles Ely and the rôle he played as benefactor of Jefferson Medical College might well end at this point. I doubt if there are very many physicians, if any, among the alumni now living who ever heard of him or know anything about his descendants. In order, then, to make the tale complete, and to bring it down to the present day and hour, I feel that an additional word need be written. To the Rev. Dr. Ely and his good wife was born, February 4, 1828, a child whom they named Benjamin Ezra Stiles Ely. Unlike his grandsire and father, he did not take up the ministry at an early age. Instead, as a youth of eighteen he was seized with the wanderlust which caused him to ship as an ablebodied seaman on the Bark Emigrant. The ship was a sailing vessel and was bound on a whaling expedition to the Indian and South Atlantic oceans. After three years of hardship, danger, privation and adventure, Benjamin Ely returned to his father's home a wiser and a disillusioned young man. He desired no more of ocean life. However, shortly after regaining his land legs the fever of the California gold rush of 1849 seized him, and in due time he was numbered among the tenderfeet who sought the elusive ore on the Pacific coast. Unlike most of the men with whom he rubbed elbows, Ben Ezra Stiles Ely had a background of culture and a stability of character which, in spite of everything, crept to the surface in due time and asserted itself. Thus it came about that he was elected to a seat in the legislature from Yuba county, California, in 1858. It requires no stretch of imagination on my part to believe that the young legislator took an active and decided stand on the side of justice and right in legislative matters pertaining to lawlessness, vice and the vigilantes, all running rampant at that time on the western coast. Indeed there is much evidence to show that he did that very thing; but the virus of wanderlust, adventure and politics which was in his veins was not sufficient to overcome the blood tendencies which he inherited from his sturdy and somewhat puritanical ancestors. Hence we find him in the course of time occupying a pulpit in a Presbyterian Church in Chicago. Later he held successful pastorates in Iowa, preaching both at Ottumwa and at Winterset. He died in Des Moines, Iowa, April 22, 1910, at the age of eighty-two years.

The final chapter in the story of Ezra Stiles

Ely would be incomplete if I did not mention one of his grandsons who also has made his mark in the world. While living near Beloit, Wisconsin, there was born on January 15, 1876, in the home of the Rev. B. E. S. Ely, a child who was christened Francis Argyle Ely. Fate decreed, however, that the lad should not follow in the footsteps of his progenitors. It caused the young man to choose the medical rather than the ministerial profession as his life's work. Consequently he entered the State University of Iowa and was graduated from its medical department in 1898. Dr. Ely then served as the first full term interne



Francis Argyle Ely, M.D., grandson.

in the new University Hospital. With the termination of his interneship he became assistant physician in the State Hospital for the Insane at Clarinda, Iowa. Two years later he severed his connection with this institution and located in Des Moines. Here he began the practice of his chosen profession. He soon was elected to the Chair of Nervous Diseases in the Medical School of Drake University, a position he continued to hold until the institution was merged with the State University of Iowa in 1913. In the forty years since his graduation, Dr. Ely has worked diligently to perfect himself in the specialty of neuropsychiatry. His studies have been pursued in some of the leading universities both at home and abroad. Thus it would seem that the interest shown by Ezra Stiles Ely over a century ago, in matters pertaining to medicine in its relationship to suffering humanity, again has asserted itself, and is manifested by the successful medical career of his grandson. For more than a quarter of a century it has been my pleasure to know Frank Ely. On many occasions he has demonstrated the sterling qualities which are inherent in his nature by virtue of heredity, culture and education. Well may it be said of him, as was said of his grandsire, that he is a man well born, finely educated, of a pleasing personality, well experienced in years, a thorough gentleman, and fully prepared to take his place in any society or in any assembly of his colleagues. As a personal friend and as an alumnus of Jefferson Medical College, I take pleasure in paying tribute to the memory of his illustrious grandfather, Ezra Stiles Ely, benefactor of Jefferson Medical College.

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PRIZES ANNOUNCED

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons announces that the annual foundation prize for this year will be $100. Those eligible to compete are first, internes, resident physicians or graduate students in obstetrics, gynecology and abdominal surgery; and second, physicians (doctors of medicine) who are actually practicing or teaching obstetrics, gynecology or abdominal surgery. Manuscripts must be presented in triplicate under a nom-de-plume to the secretary of the association before June 1; are limited to 5,000 words, and such illustrations as are necessary for a clear exposition of the thesis; and be typewritten, double-spaced on one side of the sheets, with ample margins. The successful thesis must be presented at the September annual meeting of the organization, without expense to the association and in conformity with its regulations. For further details, address Dr. James R. Bloss, secretary, 418 Eleventh Street, Huntington, West Virginia.

The Philadelphia Academy of Surgery announces that essays will be received in competition for the fifteen hundred dollar Samuel D. Gross Prize, until January 1, 1940. The conditions annexed by the testator are that the prize, "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in surgical pathology or surgical practice founded upon original investigations, the candidates for the prize to be American citizens." Additional information may be secured by addressing the Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 South 22nd Street, Philadelphia, Pennsylvania.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

CLINICAL LABORATORY METHODS AND DIAGNOSIS—By R. B. H. Gradwohl, M.D., St. Louis. Second edition. The C. V. Mosby Company, St. Louis, 1938. Price, $12.50.

INFECTIONS OF THE HAND—By Allen B. Kanavel, M.D., late professor of surgery, Northwestern University Medical School. Seventh edition, thoroughly revised. Lea and Febiger, Philadelphia, 1939. Price, $6.00.

A MANUAL OF FRACTURES AND DISLOCATIONS—By Barbara Bartlett Stimson, M.D., associate in surgery, College of Physicians and Surgeons, Columbia University. Illustrated. Lea and Febiger, Philadelphia, 1939. Price, $2.75.

MEDICINE IN THE OUTPATIENT DEPARTMENT—By Winthrop Wetherbee, Jr., M.D., junior visiting physician, Boston City Hospital. Paul B. Hoeber, Inc., New York, 1938. Price, $1.00.

OUR COMMON AILMENT—By Harold Aaron, M.D., medical consultant to Consumers Union of United States. Dodge Publishing Company, 116 East 16th Street, New York, 1938. Price, $1.50.

PHYSICAL DIAGNOSIS—By Richard C. Cabot, M.D., professor of clinical medicine emeritus, Harvard University; and F. Dennette Adams, M.D., Harvard Medical School. Twelfth edition. William Wood and Company, Baltimore, 1938. Price, $5.00.

SCARLET FEVER—By George F. Dick, M.D., professor of medicine, University of Chicago; and Gladys Henry Dick, M.D. The Year Book Publishers, Chicago, 1938.

SUPERFLUOUS HAIR AND ITS REMOVAL—By A. F. Niemoeller, A.B., M.A., B.S., with a foreword by M. H. Marton, M.D. Harvest House, New York, 1938. Price, $2.00.

SURCERY OF ORAL AND FACIAL DISEASES AND MALFORMATIONS—By George van Ingen Brown, M.D., emeritus professor of plastic surgery, University of Wisconsin. Fourth edition. Lea and Febiger, Philadelphia, 1938. Price, $10.00.

SURCICAL PATHOLOGY OF THE DISEASES OF THE MOUTH AND JAWS—By Arthur E. Hertzler, M.D., professor of surgery, University of Kansas. J. B. Lippincott Company, Philadelphia and London, 1938. Price, $5.00.

TRAUMA AND INTERNAL DISEASE—By Frank W. Spicer, M.D. Illustrated. J. B. Lippincott Company, Philadelphia and London, 1939. Price, $7.00.

THE TREATMENT OF FRACTURES—By Charles Locke Scudder, M.D., formerly assistant professor of surgery, Harvard Medical School. Eleventh edition, revised. W. B. Saunders Company, Philadelphia and London, 1938. Price, $12.00.

BOOK REVIEWS

CLINICAL LABORATORY METHODS AND DIAGNOSIS

By R. B. H. Gradwohl, M.D., director of The Gradwohl Laboratories and School of Laboratory Technique, St. Louis. Second edition. The C. V. Mosby Company, St. Louis, 1938. Price, $12.50.

The second edition of this standard textbook on laboratory procedures is one-third larger than the first which was published in 1935. This is an indication of the advances being made in laboratory medicine. In this edition many of the older and less practical tests have been eliminated and new and better ones substituted. The technic of practically every test utilized in laboratories is described in detail and with many clear illustrations which aid greatly in understanding the text. Thus the book is a valuable guide and source of reference to medical technicians, clinical pathologists and physicians performing laboratory tests. To practitioners in general the space devoted to the interpretation of the results of laboratory tests will prove very valuable.

A minor criticism of the book is its bulk. The new edititon contains 1,607 pages as compared to 1,028 in the first edition. Books of this size subjected to the rough usage of an active laboratory soon need rebinding. In future editions the author should seriously consider dividing the material into two volumes, one to contain the usual procedures of clinical pathology, and the second to carry the histologic technic, postmortem examinations, toxicologic technic and crime detection methods. Aside from this factor the reviewer can highly recommend the book to all those interested in laboratory procedures and their interpretation.

F. P. McN.

THE 1938 YEAR BOOK OF RADIOLOGY

Charles A. Waters, M.D., associate in roentgenology, Johns Hopkins University; Whitmer B. Firor, M.D., assistant in roentgenology, Johns Hopkins University; and Ira I. Kaplan, M.D., director, division of cancer, Department of Hospitals, City of New York. The Year Book Publishers, Chicago, 1938. Price, $4.50.

In this volume of 494 pages, the authors have compiled in detail a resumé of numerous magazine articles published in 1937 and 1938 from both the American and foreign literature. The material presented is gathered not only from magazines exclusively devoted to radiology, but also from magazines containing articles of special interest to radiologists.

The book is in two parts. The first part has a brief introduction by the editors and a chapter on the life of Wilhelm Conrad Roentgen, followed by twelve chapters on radiologic diagnosis (well illustrated), technic, teaching and principles of practice. Part two is given over to radiotherapeutics, including radiation biology and radiation physics, also well illustrated. Radiation therapy of inflammatory diseases such as pneumonia, rheumatic heart disease and arthritis is discussed. The chapters on radiation in the breast and gynecologic conditions are excellent.

The most recent advances in both diagnosis and therapy are included. The book can be well recom-

mended and should be of real value to the physician practicing this specialty and to the general practitioner. H. E.

THE 1938 YEAR BOOK OF GENERAL SURGERY

Edited by Evarts A. Graham, M.D., professor of surgery, Washington University School of Medicine, St. Louis. The Year Book Publishers, Chicago, 1938. Price, $3.00.

This book is not intended to present a comprehensive study of any one subject, but includes abstracts of some nine hundred articles which have been published in the medical literature in all countries. Some of our more common conditions are not mentioned, while others that are included have not been heard of by the average practitioner. For instance, nothing is said of the technic or indications for hemorrhoidectomy, while a case history of gluteal aneurysm is given.

The material is arranged in an orderly manner and is well illustrated with photographs and drawings. Under each subject several articles are abstracted on different phases; for example under gallbladder, there are various articles on anomalies, diagnosis, cholecystitis, etc. This latter advantage along with the variety of material covered makes the book well worthwhile. M. O. L.

INTERNES HANDBOOK

By members of the faculty of the College of Medicine, Syracuse University. Under the direction of M. S. Dooley, A.B., M.D. Second edition. J. B. Lippincott Company, Philadelphia, 1938. Price, $3.00.

This pocket-sized volume is an attempt to span the gap between academic medical training and the practicalities met by the interne, especially in regard to management of emergencies. Part I discusses the young doctor's duties and relationship to the hospital, its staff and patients. The second section is devoted to brief descriptions of the various laboratory methods and value thereof. Section three concerns itself with the various medical wards, presenting an outline for history and physical examination, a short description of common diseases with their treatment, and the technic of the various procedures relegated to the interne. Conduct in the surgical fields with a short presentation of inhalation anesthesia forms the next division of the book. Part V contains compended descriptions of diets, drugs and their indications. The last section refers to some common nursing procedures.

This reviewer has never been particularly impressed with the efficacy of compendiums, having found his own library, the hospital library and the advice of the resident and attending staff more adequate in all situations. C. A. S.

HOW TO CONQUER CONSTIPATION

By J. F. Montague, M.D., medical director, New York Intestinal Sanitarium. J. B. Lippincott Company, Philadelphia and London, 1938. Price, $1.50.

In answering questions which the constipated layman might ask, the author, who is a past medical director of the New York Intestinal Sanitarium, mingles sound methods of treatment with ideas which are not generally accepted. There are many worthwhile suggestions including regular habits of eating and sleeping, sensible diets, sufficient intake of water, proper amount of exercise, and the condemnation of cathartics and bran. However, the author is enthusiastic over the use of colonic irrigations, acidophilus milk and the elimination of highly protein foods.

A noteworthy part of the book is that it not only stresses the need of a physical examination for one with persistent intestinal trouble, but also informs the patient what constitutes an adequate examination of the intestinal tract.

One concludes that all physiologic processes of the human body depend on the proper emptying of the colon, because "waste materials generate poison which circulates through the body and causes a multitude of ills," including high blood pressure, low blood pressure, hardening of the arteries, fatigue, etc. M. J. R.

SYNOPSIS OF CLINICAL LABORATORY METHODS

By W. E. Bray, M.D., professor of clinical pathology, University of Virginia. Second edition. The C. V. Mosby Company, St. Louis, 1938. Price, $4.50.

This volume is the second edition, the first appearing in 1936. The author attempted with a great margin of success to write a book bringing together in a small volume the more recent information and, in his judgment, the most frequently used methods of laboratory diagnosis. The descriptions are of necessity brief, but I believe adequate, especially if the worker has had some laboratory experience.

The book is brought up to date and many additional procedures added, among which may be named serum phosphatase determination, quantitative determination of sulfanilamide in the blood, opsonocytophagic test for determining immunity status in undulant fever and the optimum dose titration of antigen for Wassermann tests. All fields of laboratory work are included; even procedures in allergy and toxicology and tissue technic are given.

This book is well written and easy to understand. The illustrations are clear and amply supplement the text. It can be recommended to both the laboratory technician and the physician in his private office, if he is interested in helpful laboratory procedures. A. C. S.



Arthur W. Erskine, M.D.

President
Iowa State Medical Society
1938-1939

The JOURNAL
of the
Iowa State Medical Society

VOL. XXIX — DES MOINES, APRIL, 1939 — NO. 4

IOWA STATE MEDICAL SOCIETY

Organized in 1850

Eighty-Eighth Annual Session

Des Moines Iowa, April 25, 26 and 27, 1939

Do not fail to register. Registration Bureau — Hotel Fort Des Moines

PROGRAM

Tuesday, April 25
8:30 a. m.
Main Ball Room

Opening Exercises: 8:30-9:00

Invocation—
DR. STODDARD LANE, Pastor, Plymouth Congregational Church

Greetings—
RUSSELL C. DOOLITTLE, M.D., President, Des Moines Academy of Medicine and Polk County Medical Society

Response—
GEORGE C. ALBRIGHT, M.D., Iowa City, second Vice President

Address: 9:00-10:00
Treatment of Circulatory Collapse and Shock—
SOMA WEISS, M.D., Associate Professor of Medicine, Harvard University Medical School, Boston, Massachusetts

Address: 10:00-10:40
The Diagnosis of Breast Tumors with Management of Carcinoma—
N. FREDERICK HICKEN, M.D.
Omaha, Nebraska

Discussers— 10:40-10:50
CHARLES S. KRAUSE, M.D., Cedar Rapids
H. DABNEY KERR, M.D., Iowa City

Closing: 10:50-11:00
N. FREDERICK HICKEN, M.D.
Omaha, Nebraska

Address: 11:00-11:30
Hyperparathyroidism and Its Roentgen Treatment—
EDWIN A. MERRITT, M.D., Director, Radiological Department, Warwick Cancer Clinic, Washington, D. C.

President's Address: 11:30-11:45
Principles and Practice
ARTHUR W. ERSKINE, M.D., Cedar Rapids

Wednesday, April 26
9:00 a. m.
Main Ball Room

Address: 9:00-10:00
New Ideas in Thyroid Surgery—
FRANK H. LAHEY, M.D., Boston, Massachusetts

Address: 10:00-10:45
Bacillary Dysentery—
WILLIAM H. HOLMES, M.D., Professor of Medicine, Northwestern University Medical School, Chicago, Illinois

Address: 10:45-11:05
Medical Department of the United States Army in Civilian Conservation Corps Activities—
COLONEL KENT NELSON, M.D., Surgeon, Seventh Corps Area, Omaha, Nebraska

Address: 11:05-11:35
The Etiology of Choreoretinitis—
WILLIAM L. BENEDICT, M.D., Professor of Ophthalmology, University of Minnesota Graduate School, Rochester, Minnesota

Sectional Conferences

Tuesday Afternoon, April 25

MEDICAL SECTION

Ben G. Budge, M.D., Chairman
Main Ball Room

The Jaundiced Bleeder; Control of Hemorrhage Through Vitamin K Therapy— 2:00-2:30
HARRY P. SMITH, M.D., Iowa City

The Nervous Heart— 2:30-3:00
BENJAMIN F. WOLVERTON, M.D., Cedar Rapids

Discussers—
JULIAN E. MCFARLAND, M.D., Ames
HAROLD E. GRABER, M.D., Fairfield

Symposium: 3:00-4:00

Demonstration: Determination of Alcohol in Blood and Urine—
HAROLD W. MORGAN, M.D., Mason City

Effects of Various Amounts of Alcohol on the Driver—
A. R. LAUER, State Safety Council, Ames

Medical-Legal Aspect of Alcohol in Road Accidents—
JUDGE T. G. GARFIELD, Ames

Neurosis and Digestive Disorders— 4:00-4:30
HAROLD C. BONE, M.D., Des Moines

Discussers—
GEORGE H. CLARK, M.D., Oskaloosa
RAYMOND S. GROSSMAN, M.D., Marshalltown

SURGICAL SECTION

Frank M. Keefe, M.D., Chairman
Tropical Room

Technic of Examination of the Spine and Manipulative Treatment— 2:00-2:30
LEO J. MILTNER, M.D., Davenport

Discussers—
ARCH F. O'DONOGHUE, M.D., Sioux City
FRED L. KNOWLES, M.D., Fort Dodge

Some Recent Developments in Plastic Surgery— 2:30-3:00
LEO H. LADAGE, M.D., Davenport

Discusser—
FRANK R. PETERSON, M.D., Iowa City

Hydronephrosis— 3:00-3:30
LAWRENCE E. PIERSON, M.D., Sioux City

Discussers—
JENNINGS CRAWFORD, M.D., Cedar Rapids
F. HAROLD ENTZ, M.D., Waterloo

Treatment of Traumatic Injuries of Abdominal Cavity, Its Wall and Contents— 3:30-4:00
WILLIAM E. CODY, M.D., Sioux City

Discussers—
CARL J. LOHMANN, M.D., Burlington
ELBERT E. MUNGER, JR., M.D., Spencer

Traumatic Lesions of the Thorax and Its Contents— 4:00-4:30
WALTER A. ANNEBERG, M.D. Carroll

Discussers—
WADE O. PREECE, M.D., Waterloo
N. BOYD ANDERSON, M.D., Des Moines

EYE, EAR, NOSE AND THROAT SECTION

Thomas R. Gittins, M.D., Chairman
South Ball Room

Oral Lesions in Otolaryngology 2:00-2:30
DEAN M. LIERLE, M.D., Iowa City

Perennial Type of Nasal Allergy— 2:30-3:00
JAMES E. REEDER, M.D., Sioux City

Discussers—
F. HAROLD REULING, M.D., Waterloo
WARREN H. FOSTER, M.D., Clinton

Herpetic Lesions of the Cornea— 3:00-3:30
CARL A. NOE, M.D., Cedar Rapids

Discussers—
JOSEPH E. DVORAK, M.D., Sioux City
JOHN H. MATHESON, M.D., Des Moines

Lateral Sinus Infection and Its Therapeutic Indications— 3:30-4:00
GORDON F. HARKNESS, M.D., Davenport

Discussers—
J. KENNETH VON LACKUM, M.D., Cedar Rapids
HENRY C. SCHMITZ, M.D., Des Moines

Nonspecific Foreign Protein Therapy in Ocular Therapeutics— 4:00-4:30
SYDNER D. MAIDEN, M.D., Council Bluffs

Discussers—
CHARLIE E. CHENOWETH, M.D., Mason City
LAWRENCE A. TAYLOR, M.D., Ottumwa

Our Guests



Frank H. Lahey, M.D.
Boston, Massachusetts



Irvin Abell, M.D., President
American Medical Association
Louisville, Kentucky



William L. Benedict, M.D.
Rochester, Minnesota



Soma Weiss, M.D.
Boston, Massachusetts

Sectional Conferences

Wednesday Afternoon, April 26

MEDICAL SECTION

Ben G. Budge, M.D., Chairman
Tropical Room

What Constitutes Adequate Treatment of the Child with Diabetes Mellitus?— 2:00-2:30
JULIAN D. BOYD, M.D., and ROBERT L. JACKSON, M.D., Iowa City
Discusser—
ROBERT O. HUGHES, M.D., Ottumwa

The Serum Treatment of Pneumonia 2:30-3:00
ROBERT N. LARIMER, M.D., Sioux City
Discusser—
ELMO E. GAMET, M.D., Lamoni

Encephalitis— 3:00-3:30
HIRAM B. HENRY, M.D., Des Moines
Discusser—
DONALD W. LEIK, M.D., Dubuque

Insomnia— 3:30-4:00
J. STUART MCQUISTON, M.D., Cedar Rapids
Discussers—
MATTHEW T. MORTON, M.D., Estherville
FRANK H. CLARK, M.D., Clarinda

Blood Sedimentation Tests and Their Value— 4:00-4:30
FRED H. LAMB, M.D., Davenport
Discussers—
FRIEDRICH A. HECKER, M.D., Ottumwa
DALE D. CORNELL, M.D., Greenfield

SURGICAL SECTION

Frank M. Keefe, M.D., Chairman
Main Ball Room

Cancer of the Colon and Rectum 2:00-3:00
FRANK H. LAHEY, M.D., Boston

Acute Pelvic Lesions in the Female, Diagnosis and Modern Management— 3:00-3:30
CECIL W. SEIBERT, M.D., Waterloo
Discussers—
ADDISON BROWN, M.D., Iowa City
ROY I. THEISEN, M.D., Dubuque

Practical Points in X-ray Diagnosis in Surgery— 3:30-4:00
THOMAS A. BURCHAM, M.D., Des Moines
Discusser—
HUBERT K. KNUDSEN, M.D., Clinton

Appendicitis: Mortality and Management— 4:00-4:30
ARNOLD L. JENSEN, M.D., Council Bluffs
Discussers—
HENRY J. HEUSINKVELD, M.D., Clinton
DONOVAN F. WARD, M.D., Dubuque

EYE, EAR, NOSE AND THROAT SECTION

Thomas R. Gittins, M.D., Chairman
South Ball Room

Eye Disorders Due to Exogenous Toxemia— 2:00-2:30
WILLIAM L. BENEDICT, M.D., Rochester, Minnesota

The Commoner Types of Conjunctivitis— 2:30-3:00
CECIL S. O'BRIEN, M.D., Iowa City

Nerve Deafness— 3:00-3:30
JAMES A. DOWNING, M.D., Des Moines
Discussers—
ROYAL F. FRENCH, M.D., Marshalltown
SIDNEY G. HANDS, M.D., Davenport

Status of Ophthalmologists and Otolaryngologists in a State Medical System 3:30-4:00
SUMNER B. CHASE, M.D., Fort Dodge
Discusser—
CHARLES L. CHAMBERS, M.D., Des Moines

Our Guests



Edwin A. Merritt, M.D.
Washington, D. C.



William H. Holmes, M.D.
Chicago, Illinois



Willis C. Campbell, M.D.
Memphis, Tennessee



Harold R. Conn, M.D.
Akron, Ohio

Tuesday Evening, April 25

SMOKER

Main Ball Room—Hotel Fort Des Moines

Floor Show

8:00 p. m.

Wednesday Evening, April 26

ANNUAL BANQUET

Main Ball Room—Hotel Fort Des Moines

6:30 p. m.

Toastmaster—
WILLIAM C. GOENNE, M.D., Davenport

President's Address—
ARTHUR W. ERSKINE, M.D., Cedar Rapids

President-Elect's Address—
FELIX A. HENNESSY, M.D., Calmar

Introduction of Guest Speakers and Section Chairmen—

Music—Dancing—Bridge

Thursday, April 27

9:00 a. m.

Main Ball Room

Symposium on Fractures—
DONALD C. CONZETT, M.D., Dubuque, Presiding

1. Fractures About the Ankle Joint 9:00- 9:20
WILLIAM G. BESSMER, M.D., Davenport

2. The Treatment of Fractures of the Spine— 9:20- 9:50
HAROLD R. CONN, M.D., Akron, Ohio

3. The External Bone Bridge for the Internal Fixation of Fractures— 10:00-10:20
FRED L. KNOWLES, M.D., Fort Dodge

4. Use of Vitallium for Fixation of Fractures— 10:20-11:00
WILLIS C. CAMPBELL, M.D., Memphis, Tennessee

Address— 11:00-11:30
IRVIN ABELL, M.D., President, American Medical Association, Louisville, Kentucky

Report of House of Delegates and Installation of President— 11:30-11:45

State Society of Iowa Medical Women

Forty-second Annual Meeting
Tuesday, April 25, 1939

LUNCHEON
Younkers' Tea Room
12:15 p. m.

PROGRAM

Greetings—
ROSE BUTTERFIELD, M.D., Indianola

President's Address—
MARTHA M. LINK, M.D., Dubuque

History of the Iowa State Medical Society—
JEANNETTE DEAN-THROCKMORTON, M.D., Des Moines

Business Meeting and Election of Officers—

OFFICERS

MARTHA M. LINK, M.D., Dubuque.....President
MADELENE M. DONNELLY, M.D., Mason City.....Vice President
NELLE T. SCHULTZ, M.D., Humboldt.....Secretary
JEANNETTE-DEAN THROCKMORTON, M.D., Des Moines..Treasurer

AMERICAN MEDICAL WOMEN'S ASSOCIATION

Branch 19

Tuesday, April 25, 1939

DINNER
Younkers' Tea Room
6:15 p. m.

Business and Social Meeting—
Moving Picture (included with dinner ticket)—8:00 p. m.

OFFICERS

RUTH F. WOLCOTT, M.D., Spirit Lake.....President
PAULINE V. MOORE, M.D., Iowa City.....Secretary-Treasurer

Reservations are requested for both meetings prior to April 25. All women physicians are invited to both meetings.

Committee on Arrangements—
NELLE S. NOBLE, M.D., Chairman
1107 Bankers Trust Building, Des Moines, Iowa

HOUSE OF DELEGATES

Cabin

Tuesday, April 25

3:30 p. m.

Roll Call
Approval of Minutes of Friday Morning Session, 1938
Report of Secretary
Report of Treasurer
Report of Board of Trustees
Report of Council
Report of Delegates to the American Medical Association
Reports of Standing Committees of the House of Delegates:

Committee on Constitution and By-Laws—
John H. Henkin, M.D., Sioux City, Chairman
Committee on Finance—
Ernest C. McClure, M.D., Bussey, Chairman
Committee on Medical Economics—
Ernest E. Shaw, M.D., Indianola, Chairman
Committee on Medical Education and Hospitals—
Jack V. Treynor, M.D., Council Bluffs, Chairman
Medico-Legal Committee—
Frank A. Ely, M.D., Des Moines, Chairman
Committee on Necrology—
James E. Reeder, M.D., Sioux City, Chairman
Committee on Publications—
Lee F. Hill, M.D., Des Moines, Editor
Committee on Public Policy and Legislation—
Fred Moore, M.D., Des Moines, Chairman

Reports of Special Committees of the House of Delegates:

Baldridge-Beye Memorial Committee—
Julius S. Weingart, M.D., Des Moines, Chairman
Committee on Child Health and Protection—
Robert H. McBride, M.D., Sioux City, Chairman
Clinical Committee—
Lester C. Kern, M.D., Waverly, Chairman
Fracture Committee—
Donald C. Conzett, M.D., Dubuque, Chairman
Historical Committee—
Walter L. Bierring, M.D., Des Moines, Chairman
Medical Library Committee—
Jeannette Dean-Throckmorton, M.D., Des Moines, Librarian
Committee on Military Affairs—
Robert S. Shane, M.D., Pilot Mound, Secretary
Committee on Public Relations—
Herbert E. Stroy, M.D., Osceola, Chairman
Committee on Scientific Exhibits—
Douglas N. Gibson, M.D., Des Moines, Chairman
Woman's Auxiliary Advisory Committee—
Carl B. Hickenlooper, M.D., Winterset, Chairman

Reports of Committees of the Council:

Speakers Bureau Committee—
Earl B. Bush, M.D., Ames, Chairman
Cancer Committee—
E. D. Plass, M.D., Iowa City, Chairman

Memorials and Communications
New Business
Election of Committee on Nominations

Thursday, April 27

Cabin—Fort Des Moines Hotel

7:30 p. m.

Roll Call
Reading of Minutes
Report of Committee on Nominations
Election of Officers
Reports of Committees
Unfinished Business
New Business
Announcement of Committees
Adjournment

ENTERTAINMENT

Monday, April 24

Afternoon

Golf and Country Club
Pre-Convention Golf Tournament

Tuesday, April 25

12:15 p. m.

State Society of Iowa Medical Women
Luncheon and Program
Younker's Tea Room

2:00-5:00 p. m.
Woman's Auxiliary and Visiting Women
Trip Through Veterans' Hospital
preceding teas

6:15 p. m.
American Medical Women's Association
Dinner and Program
Younkers' Tea Room

8:00 p. m.
Woman's Auxiliary and Visiting Women
Bridge Party
Tropical Room
Hotel Fort Des Moines

8:00 p. m.
Stag and Smoker
Main Ball Room
Hotel Fort Des Moines

Wednesday, April 26

12:15 p. m.

Younkers' Tea Room
Woman's Auxiliary Luncheon
All Visiting Ladies Invited

6:30 p. m.
Annual Banquet, Ball Room
Hotel Fort Des Moines
Physicians, Their Wives and Guests

Arrangements Committee

Arthur W. Erskine ..... Cedar Rapids
Robert L. Parker ..... Des Moines
Harold J. McCoy ..... Des Moines
Christian B. Lughinbuhl ..... Des Moines
Lester D. Powell ..... Des Moines

HEADQUARTERS



MEETING PLACES

Hotel Headquarters—Hotel Fort Des Moines
General Headquarters—Hotel Fort Des Moines
General Session Meetings—Main Ball Room, Hotel Fort Des Moines
Medical Section—Tuesday, Main Ball Room
Wednesday, Tropical Room
Surgical Section—Tuesday, Tropical Room
Wednesday, Main Ball Room
Eye, Ear, Nose and Troat Section—South Ball Room
House of Delegates—The Cabin, Hotel Fort Des Moines
Registration Desk—Lobby Floor
Commercial Exhibits—Lobby and Mezzanine Floors
Scientific Exhibits—Lounge, Hotel Fort Des Moines
Hobby Show—Off Mezzanine Floor
Moving Picture Theater—Green Room, Hotel Fort Des Moines
Headquarters for State Society of Iowa Medical Women—Younkers' Tea Room
Headquarters for Woman's Auxiliary—Hotel Fort Des Moines

SPECIAL MEETINGS

Iowa Alumni Association Luncheon
Tuesday, April 25
Tropical Room, Hotel Fort Des Moines, 12:15 p. m.

County Secretaries Conference Luncheon
Tuesday, April 25
Tropical Room, Hotel Fort Des Moines, 12:15 p. m.

Past President's Luncheon
Tuesday, April 25
Tropical Room, Hotel Fort Des Moines, 12:15 p. m.

X-ray Club Luncheon
Tuesday, April 25
Parlor A, Hotel Fort Des Moines, 12:15 p. m.

Military Surgeons' Dinner
Tuesday, April 25
South Ball Room, Hotel Fort Des Moines, 6:00 p. m.

Eye, Ear, Nose and Throat Section Luncheon
Wednesday, April 26
South Ball Room, Hotel Fort Des Moines, 12:15 p. m.

Northwestern University Alumni Luncheon
Wednesday, April 26
Dining Rooms 1 and 2, Hotel Fort Des Moines, 12:15 p. m.

Section Chairmen and Reporters

Section on Medicine—
Chairman, BEN G. BUDGE, M.D., Ames

Section on Surgery—
Chairman, FRANK M. KEEFE, M.D., Clinton

Section on Ophthalmology, Otology, and Rhinolarynology—
Chairman, THOMAS R. GITTINS, M.D., Sioux City

Reporter, General Sessions and House of Delegates—
Master Reporting Company, Chicago

Rules for Papers and Discussions

For the general session meetings, no address or paper, except those of the President and the Guests, shall occupy more than twenty minutes in its delivery. All papers read before the Society shall be the property of the Society. Each paper should be deposited with the Secretary when read; if this is not done, it will not be published.

In most of the sectional meetings, the talks are twenty minutes in length. Discussions may not be longer than five minutes. A typewritten copy of each talk should be left with the chairman of the section so that it can be published in the JOURNAL.

Do not fail to register. Your badge will permit you to attend all scientific and social sessions of the Society.

Please bring your membership card for presentation at the registration desk. It entitles you to attend the meeting without cost.

Women attending the meeting are urged to register at the registration desk for the Woman's Auxiliary on the third floor of the hotel.

WOMAN'S AUXILIARY
Iowa State Medical Society

Organized May 9, 1929, Des Moines, Iowa
Tenth Annual Meeting
Registration Headquarters
Hotel Fort Des Moines

PROGRAM

Tuesday, April 25, 1939
12:30 p. m.
Hotel Fort Des Moines

Preconvention Meeting
For Board of Directors and County Auxiliary Presidents

2:00 to 5:00 p. m.
Trip through Veterans' Hospital
Four teas

8:00 p. m.
Hotel Fort Des Moines
Tropical Room
Bridge Party

All visiting women as well as Auxiliary members are invited to attend

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Wednesday, April 26
9:00 a. m.
Assembly Room, Hotel Fort Des Moines
President, Mrs. D. W. Harman, Presiding

Invocation—
Mrs. Elbert T. Warren, Stuart

Address of Welcome—
Mrs. Cecil C. Jones, Des Moines

Response—
Mrs. Edward A. Hanske, Bellevue

In Memoriam

Announcement of Committees

Report of State Officers

Report of Standing Committees

Award of Membership Cup—
Mrs. James A. Downing, Des Moines

Report of Registration—
Mrs. John H. Matheson, Des Moines

Address: The National Health Program—
Alonzo L. Jenks, M.D., Des Moines

Announcements—
Mrs. Charles Ryan, Chairman, Committee on Arrangements

Adjournment

12:15 p. m.

Luncheon

Younkers' Tea Room

Greetings—
Arthur W. Erskine, M.D., Cedar Rapids
President, Iowa State Medical Society

Greetings—
Felix A. Hennessy, M.D., Calmar
President-Elect, Iowa State Medical Society

2:00 p. m.

Afternoon Session

Assembly Room, Hotel Fort Des Moines

Music

Address—
Mrs. Charles C. Tomlinson, Omaha, President, Woman's Auxiliary to the American Medical Association

Report of Winning Essay

Talk—
Mrs. George W. Webber, Des Moines

Report of County Presidents

Report of State President

Report of Committees

Election of Officers

Installation of Officers

Adjournment

4:00 p. m.
Post Convention Board Meeting

6:30 p. m.
BANQUET
Ball Room, Hotel Fort Des Moines
Physicians, Wives, and Guests

This program, social and business, is for all visiting women. All eligible women are urged to become members.

FRACTURES OF THE HIP*

ARCH F. O'DONOGHUE, M.D., Sioux City

I have deliberately chosen a subject with which all of you are familiar from personal observation. This injury, which as recently as 1934, has been described by Speed as "the unsolved fracture" has been one of the greatest tragedies of the aged. There is none of us here who has not on many occasions had to deal with these pathetic old people, because this is primarily a fracture of the aged, with an injury which not only cripples but has so often proved terminal, and terminal after a long period of suffering with pain in the hip, terrific bed sores, mental aberration, hypostatic pneumonia, and other complications too numerous even to mention. I have chosen this subject deliberately not because the principles of treatment of this disaster have changed, but because the past very few years have seen a complete revolution in the manner in which the old principles can be applied.

As far back as recorded history, bones have been broken; and from the dawn of recorded history fracture treatment has been more or less well understood as an attempt to place the ends of the fractured bones in that position which they had with one another before fracture occurred, and to hold them in that position until they united. The use of splints, of traction and countertraction, of levers to give the surgeon more power to exert on the fracture, of fracture tables, and even of malleable bandages corresponding to our modern plaster of paris, have been known and applied. Strangely enough from before the time of Hippocrates, through the dark ages, and well into the nineteenth century, there was little if any change in the mechanical application of these principles of reduction and immobilization. The first English text dealing with fractures in any detail was published by Sir Astley Cooper[1] in 1822, and from his time until the discovery of the roentgen ray in 1895 some marked advances were made in the adaption of known mechanical principles to the treatment of fractures. The most notable of these were suspension with weights and pulleys described by Smith[2] in 1827, Buck's mode of applying extension about 1850, and the Hodgen's and Thomas' splints which were described in the early sixties. The invention of these mechanical aids, however, by no means changed the underlying principles described by the Egyptians and Greeks, and I again wish to emphasize that the modern treatment of fractures which must be said to date from the discovery of the roentgen ray differs in no respect in these elementary principles; the difference is entirely in our ability to apply these principles aided by our better concept of anatomy, physiology and asepsis, and our modern use of the x-ray.

Fractures around the hip fall into two general classifications, the intertrochanteric and those through the neck of the bone to which the capsule is attached which we today call transcervical. This difference was well known to the ancients who in the case of intertrochanteric fracture advised binding the leg from the foot to the waist with a long board or limb of a tree because they knew healing would take place; and who, in the case of the second type advised no treatment at all because they knew healing would not take place regardless of the treatment used. We find this same idea persisting in Sir Astley Cooper's book written 4,000 years later in 1822 from which I quote, "Fractures of the neck of the femur internal to the capsular ligament do not unite by bone". The treatment advised by him was precisely that advised by the ancients, "It is of no use to sacrifice the patient's last remnant of health and strength and run the risk of producing a slough of the nates by a long confinement in bed in the hope of procuring union by bone. He may be kept in bed a fortnight and then get up and sit in a high chair and shortly begin to crawl about with crutches". The principles of treatment, reduction and immobilization were known to Cooper as they were known to Galen; a mode of applying them to this particular fracture was not known to either of them.

The tremendous strides made by surgery during the nineteenth century were well reflected in the treatment of fractures generally, but in regard to fractures of the hip we find Nicholas Senn[3] in our own enlightened age sending a questionnaire to fifty prominent surgeons of his acquaintance as follows: "In your opinion does bony union ever occur in intracapsular fractures of the neck of the femur?", to which question he received fifty direct replies, twenty-seven emphatic "noes," eighteen "yes, very occasionally," and five "do not know". However, Senn and his colleagues well understood those principles of treating fractures which had been known to scientific men for centuries, because Senn gives as his idea of the cause of nonunion in this fracture the fact that, "There is no specific tendency to nonunion in any form of fracture. If the ends of the bones can be kept in perfect apposition, union by bone will take place". Gurlt[4], an eminent German pathologist of the same era, reports, "Old age does not retard the process of union as has been

* Presented before the Upper Des Moines Medical Society, Spirit Lake, August 4, 1938.

erroneously supposed. Reparative process remains the same during adult life." In his summation of the cause for nonunion Senn states, "From this short review we are not only justified but warranted in asserting that the only cause for nonunion in the case of an intracapsular fracture is to be found in our inability to maintain perfect coaptation and immobilization of the fragments during the time required for bony union to take place."

On January 23, 1896, Roentgen made an announcement of the discovery of the x-ray before the Physico-Medical Society at Wurtzberg. This news traveled with lightening speed over the entire world and immediately the treatment of fractures was revolutionized, since now the actual position of the fractured bone could be seen. This discovery did not, of course, change the principles so well known, but it did allow the surgeon dealing with a fracture to apply these principles in a more enlightened manner and this, as might be expected shortly brought about a complete change in the method of handling fractures of the neck of the femur. In November, 1902, we find an article by Royal Whitman[5] of New York who, guided by the x-ray, devised a method of actually reducing these fractures and, to some extent at least, of holding them reduced until they could unite. Therefore, if Senn's questionnaire had been sent a decade later the answers would not have been that union does not occur, but that union does occur in about half of the cases. Whitman's contribution made no change in the underlying principles; it simply outlined an advance in our ability to apply them.

By 1920 the Whitman abduction treatment was well established and had been used in many thousands of cases, but nonunion still occurred in over half of the patients treated by this enlightened method. We still find in reputable medical text books published in the twenties that the old advice, "Treat the patient and let the fracture go," was still in vogue. This statement would never be used and has never been used in the treatment of any other injury, since all of us know that almost invariably the treatment of the injury is also the best treatment for the patient.

Sir Arbuthnot Lane visited this country in 1910, and described his method of putting steel plates on fractures, the so-called internal fixation, from which flowed for many years a perfect torrent and mania for putting plates of some kind on all kinds of fractures. Naturally enough an attempt was made to utilize this method in treating fractures of the neck of the femur. We find Murphy attempting with some degree of success to hold these fractures by the use of wrought iron nails and wood screws. In this he was not very successful, not because the principle of reduction and fixation was at fault, but because experience and mechanical and x-ray aids had not yet evolved far enough to permit these principles to be applied. In 1929 Santos[6] ran through a series of nearly one thousand transcervical fractures of the hip treated in reputable clinics, about five hundred of them by the Whitman method and five hundred by other methods. Of these, as might be expected, Whitman's abduction cast showed a higher percentage of unions than did the other group. There was still a disappointingly large number of nonunions, because even with Whitman's method and in skillful hands the number of unions was less than half of the total treated. During all of this period the art and science of surgery was maturing, the understanding of the principles and application of the x-ray were becoming more and more standardized. About this time Lockwood and others perfected a technic in x-ray by which lateral as well as anteroposterior views of the neck of the fractured femur could be obtained. It was then found that many of these transcervical fractures which, after looking at the anteroposterior x-ray we had thought were perfectly reduced, were actually not reduced when viewed laterally. Again an impetus was given to the treatment of the fractures of the femoral neck and we have Leadbetter[7] in 1932 describing a different technic in reducing these fractures which resulted in a more perfect apposition of the ends of the fractured bones. However, even in Leadbetter's own hands and with the fractures perfectly reduced only about sixty per cent of them healed. The principles of reduction and immobilization had not changed; reduction could now be made perfectly and proved. Therefore, the other factor, that of immobilization, must be at fault.

All advance is a gradual process of evolution; each further step depending upon steps which have been made earlier. The eminent archeologist, Breasted[8], puts this well when he says, "Thus if we went back far enough, we would reach a point where no one could build a stage coach or a wagon because no one had invented a wheel or tamed a wild horse." Metallurgical research had by the late twenties developed extremely strong steels which were rustless. Experimenting with these, Smith-Petersen[9] published in 1931 a method of internal fixation by the use of an ingenuously devised three-flanged nail which had a tremendous surface area for its cross-sectional size. Its use, however, necessitated an open reduction

of the fracture and a complete exposure of the neck of the femur, a somewhat formidable undertaking, since the larger number of these fractures occur, not in robust individuals who are good surgical risks, but in frail and aged persons in whom any such surgical undertaking might be a menace to life. Smith-Petersen's first series of cases dealt with carefully selected and the more robust of the patients he had seen with fractures of the hip, but his end results were very gratifying since he was obtaining some eighty-five per cent of unions in those patients who had been subjected to internal fixation with a three flanged nail by open arthrotomy. Immobilization finally had been made as accurate as reduction. The search continued for some method by which the older patients and the poorer surgical risks could also be given the advantage of this discovery. In 1932 Johansson[10] devised a method by which, using a bi-plane fluoroscope, a guide wire, and a cannulated Smith-Petersen nail, he was able to transfix the fragments by a simple linear incision over the greater trochanter. Almost at the same time Wescott[11] described a similar method with slight variations in technic. Other men, notably Knowles[12] and Telson[13], tried to accomplish the same result by using multiple rustless steel pins. These methods or some variation of them have been used extensively for the past three years and, in the opinion of most of us who are dealing with fractures of the hip, have completely changed the convalescent outlook for these unfortunate people. This again I wish to emphasize is not a new theory but simply a new method of applying the age old principle of reduction and immobilization. As these various methods were first worked out some three or four years ago most operators were putting casts on their patients for a few weeks or were suspending them. Later experience has proved this was unnecessary. Following internal fixation patients can be returned to bed without dressings, they can be allowed in a chair in a few days and can be kept in a chair. They, of course, cannot be allowed weight bearing as some operators had hoped because fixation is not made sufficiently strong to permit this; but they have no pain, they have no bed sores, they have no hypostatic pneumonia, they have no cystitis, they do not develop the mental depression which long immobilization in plaster almost invariably brings to older people and in fact unless one has followed the convalescent course of one of these nailed patients one would find it hard to believe that a patient with a fractured hip could be so comfortable.

It is not necessary to dwell on the intricate technical details of internal fixation. The method is new and each operator who does it seems to have devised a technic of his own and many have devised different types of nails. This is of no importance; they are all good. The important thing is the ability to apply a method in which subcutaneous transfixion and fixation of these fractures can be made. I shall briefly run over with you the technic used by us, not because it is any better than other technics, but because naturally it is the one with which I am most familiar.

Before proceeding to the actual nailing one must know the exact length of a nail to use, for obviously if the nail is too long it will injure the fovea or penetrate the pelvis and if it is too short it will not sufficiently engage the fracture. There are two simple methods of determining the length of the nail required. The first consists of taking a flat x-ray of the pelvis with the tube a distance of sixty inches from the target and the good hip in complete internal rotation. With the hip in internal rotation the neck of the bone is parallel with the horizon, and with the tube at such a great distance from the target, the amount of distortion of the length of the neck is negligible so that the length of the nail required may be accurately determined by simply measuring the length of the neck on the good side. If, however, x-ray equipment does not permit the tube to be placed at such a distance the length of the nail can be determined equally well by placing a metal rod three inches long with adhesive tape over the trochanter on the good side and x-raying the pelvis at any distance. By measuring the projected length of the metal rod on the plate the amount of distortion may be readily computed by measuring the neck on the sound side. For instance, if the metal rod three inches long measured in the resulting x-ray film as four inches long we know that the actual length of the neck of the femur is twenty-five per cent less than its length as measured on the film. Either method is quick and accurate and either may be used equally well.

There are of course some special instruments required for this operation. One is an extremely mobile, shock proof x-ray tube and a hooded fluoroscope which can be used in a lighted room. For this type of fluoroscopy one's eyes must be well prepared or the images cannot be seen easily. Therefore, a pair of dark goggles should be worn for ten or fifteen minutes before work is started. In addition to this one needs a drill; a twelve inch heavy Kirschner wire; the cannulated Smith-Petersen nail; a small three flanged chisel or a small straight chisel; a cannulated driving punch which can be threaded over the wire down to the head

of the nail so that the nail may be driven without driving the wire ahead of it; a heavy mallet; another driving punch which has a hole in the end large enough to receive the head of the nail so that the fracture may be impacted after the nail is in place, because it is theoretically possible for distraction to take place as the nail penetrates the fracture line, much as two boards might separate when a nail passes between them; and finally an extractor so that if by some mischance the nail is placed wrong it can be removed and replaced. In addition to these the usual instruments for any piece of surgery are required.

The first step, of course, is the choice of anesthetic. Experience has shown that in comparatively slender individuals infiltrative local anesthesia about the great trochanter and along the neck of the femur, together with sedation by morphine or barbiturates is sufficient. In heavier individuals a local infiltration along the trochanter with the addition of light ethylene, vinyl ether, or cyclopropane at the moment of reduction is needed. A full general anesthetic is seldom if ever indicated. The second step is that of accurate reduction and we have found that Leadbetter's modification of the original Whitman technic is the method of choice. This consists, as you know, of flexion of the leg on the thigh, internal rotation and circumduction into moderate abduction. The position of the fractured neck then must be accurately determined because reduction must be complete and exact. Therefore, a fluoroscopic check is made in both an anteroposterior and axial plane, or x-ray plates may be taken if accurate fluoroscopy is not available. Some way then must be found to determine, on the surface of the skin, the exact position of the neck of the femur. We put a steel rod on the skin and fasten it with adhesive tape over the position in which we think the neck lies. Another anteroposterior plate or fluoroscopic glance must then be had to see whether this guide actually parallels the neck of the femur. If it does, we are ready to proceed; if it does not, it must be so adjusted that it does. An incision now is made along the lateral border of the upper fifth of the femur down to the bone and a guide wire is driven in with a drill exactly paralleling the guide wire lying on the skin and also exactly paralleling the floor, because with the entire extremity in internal rotation the neck of the femur normally lies parallel with the floor. The wound is now temporarily closed with clips and is draped and another fluoroscopic view is taken, anteroposterior and lateral, or plates may be used if necessary. If these show the guide wire exactly in the center of the neck we may proceed with the actual nailing. If not, it must be withdrawn and replaced so that it does lie exactly in the center of the neck. Three chisel cuts corresponding with the flanges on the nail are then made around the wire either with a small straight chisel or with a three flanged chisel. The nail is now threaded over the guide wire, a cannulated driving punch is placed over the projecting portion of the guide wire and the nail is driven firmly into the neck of the femur. When it is in place, for fear that the fragments may have been slightly distracted as the nail went through the fracture line, the entire fracture is again impacted by another impactor which has a hole in it large enough to fit around the head of the nail. The wound is then closed, the patient is x-rayed in both planes, and is returned to bed without further immobilization of any kind. A gutta percha drain is left in place for twenty-four hours. The patient is allowed to sit up in bed the same day and allowed to be up in a chair as soon as he feels like it. Weight bearing, of course, is not permitted under any circumstances until x-ray examination shows the fracture is healed and trabeculated bone is going across the fracture area. This time varies and no definite statement can be made as to the length of time before weight bearing is allowed. It usually is between four and six months. The nail may or may not be removed. We have removed most of them because they have a tendency to become a little loose after months of contact with the bone and removing them is an extremely simple matter. A short incision under a local anesthetic is all that is required. This, however, is largely a matter of personal choice.

The operating time in our hands rarely exceeds thirty minutes. In our experience and the experience of most clinics it is neither so lengthy nor so shocking as reduction and the application of a cast. The convalescence is so immeasurably more comfortable and less dangerous, and the end results are so infinitely better, that we strongly feel this method is the method of choice for treating all transcervical fractures of the hip. In fact we will go so far as to say that in our opinion it is very seldom contraindicated.

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A CASE OF UNDULANT FEVER TREATED WITH SULFANILAMIDE

A. E. LIVINGSTON, M.D., HOWARD D. GRAY, M.D., and HENRY G. DECKER, M.D., Des Moines

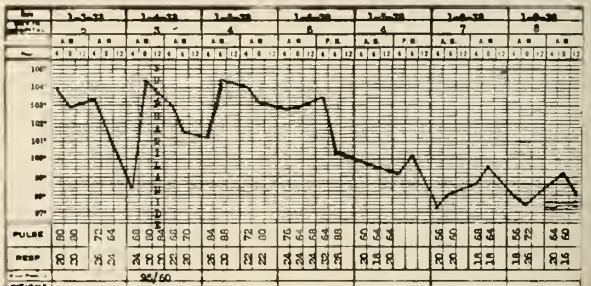
Since 1935 the drug prontosil and its various chemical derivatives have been used for the treatment of infections caused by the hemolytic streptococcus. One variant of this drug, para-aminobenzenesulfonamide (sulfanilamide) is given orally. It has been shown to be equally effective in the treatment of the infections produced by the hemolytic streptococcus and has also been used in the infections produced by certain other organisms. At present, the evaluation of the drug in connection with such infections as gonorrhea, pneumococcal pneumonia and gas bacillus infection is not possible, due to lack of sufficient data as well as conflicting reports. We feel that this report of our case of undulant fever, treated with sulfanilamide, might be of value because of the remarkable course. There was prompt alleviation of symptoms and avoidance of relapse. There have been several other cases so treated and reported in the literature by others. This case merely adds to the list and by doing so emphasizes the use of sulfanilamide in the treatment of undulant fever.

On January 2, 1938, this white male merchant, forty-two years of age, was admitted to the Iowa Methodist Hospital. For the previous month he had had a cold which was not severe enough to keep him from business. For four days he had experienced severe low back pain, generalized aching with a slight fever, and for two days a frontal headache. Twenty-four hours before admission, the patient had a severe shaking chill, followed by a fever of 104.5 degrees, and burning dysuria. Upon examination the man appeared to be acutely ill and had a notable weight loss. He had a temperature of 101.5 degrees, pulse of 80 and respirations 24 per minute. His blood pressure was 90/60. The heart and lungs were apparently normal but the abdomen was tense. On neurolgic examination there were diminished deep reflexes and all of the superficial reflexes were absent. The specific gravity of the urine was 1.022 and contained 0.4 of a gram of albumin, as well as a few pus cells. There were 6,400 leukocytes per cubic millimeter and a differential count of 53 per cent neutrophiles and 47 per cent lymphocytes. The red blood cell count was 4,700,000 with 14.3 grams hemoglobin.

Date	1-3-38	1-4-38	1-5-38	1-6-38	1-7-38	1-8-38	1-10-38	1-12-38	1-13-38
Hemoglobin	14.3					80%	80%	80%	
Erythrocytes	5.46			4.35		5.36	4.75	4.82	
Leucocytes	6400	4750	5900	9500	11500	11350	10500	9400	9250
Lymphocytes	47	27		21.5	30.5	25	40	43	29.5
Monocytes		5.5		2.5	3.5	3	.5	3.5	2.5
Neutrophiles	53	65		76	65.5	72	55.5	47	65
Eosinophiles		.			.5		3.5	4	2.5
Basophiles		2.5					.5	2.5	.5

The past and family history were irrelevant. The patient did state, however, that he had obtained milk for his family's use from a small dairy in the vicinity of his home and that the milk was not pasteurized, although the cows in the herd were "tested". The Widal agglutination test for typhoid was negative. The Kahn flocculation test for syphilis was negative. The undulant fever agglutination test was positive in dilutions from 1-500.

On January 3, 1938, the temperature was 104.4 degrees and the patient had several mild chills. The leukocyte count was 4,750 with a differential count of 65 neutrophiles, 27 lymphocytes, 5.5 monocytes and 2.5 eosinophiles.



Sulfanilamide, grains forty per day, with sodium bicarbonate, grains twenty per day, was started. The following day there was no appreciable change in the patient's condition; the temperature reached 104.6 degrees. The second day after the administration of sulfanilamide was begun, the temperature was 103.2 degrees in the late afternoon, but fell to 100 degrees in the early evening. There was a profuse diaphoresis. The white blood cell count on this day, after the admin-

istration of 60 grains of the drug, was 9,500. Six days after the administration of sulfanilamide was begun the temperature was normal. The general condition of the patient was improved, although there was still a marked degree of weakness. The drug was discontinued on the seventh day, a total of 230 grains having been given.

The subsequent course of the patient was uneventful, with no recurrence of fever. He was discharged on January 21, nineteen days after admission, and has experienced no relapse of the illness. It was subsequently learned that two cows of the herd which had been supplying the milk for his family had positive agglutinations for the Bang organism.

SUMMARY

This man, forty-two years of age, was completely relieved of all symptoms of undulant fever and to date has suffered no relapse. It is possible that he contracted the disease a month before admission so that his stay in the hospital was during the period in which spontaneous remission of symptoms could be expected. Against this is the fact that his first chill occurred twenty-four hours before admission, indicating that this was the onset of the illness, despite the history of a cold for one month previous. Furthermore, actual clinical improvement occurred approximately forty-eight hours after the administration of sulfanilamide was begun. It is noteworthy that at this date there was a rise in the leukocyte count with a change to the normal proportions in the differential count, concomitant with the fall in temperature to normal, indicating the decline of the infection.

OVARIAN TUMORS IN CHILDHOOD

WITH REPORT OF A THIRTY-TWO POUND CYST IN GIRL TWELVE YEARS OF AGE

Oscar H. Miller, M.D., Estherville

Ovarian tumors occur in childhood, are rare in infancy and become more frequent as puberty approaches. For the most part, these growths arise during the period of sexual activity. A search of the literature shows such growths (of the dermoid type) present at birth and therefore increasing as the individuals approach puberty. Our case is of such a size (only a few any larger being recorded in the literature) that I believe it warrants reporting. Most forms of disease of the ovaries found in adults, have also been found in children. Although certain types are more common during certain periods, as in early life, the dermoid is the most commonly found. As puberty approaches, the cystic type becomes more common, and a few carcinomata have been reported.

Kelly[1] reports on 126 cases of ovarian tumors in children including 55 cysts, 47 dermoids and 24 solid tumors. Of the 55 cysts operated on, four patients died, making a mortality of 7.5 per cent. Kelly in this report mentions Sims' patient, a girl eleven years of age, who was operated on in 1880. A multilocular cyst weighing sixty-one pounds was found.

Gardner[2] reviews the first 29,000 cases on file at the Johns Hopkins Gynecologic Pathological Laboratory from the point of view of age incidence. There were 609 ovarian tumors in this series, and the youngest patient was six years of age. There were 34 cases, or 5.6 per cent, occurring between the ages of six and twenty years. Gardner notes that about the same percentage, 7.0 per cent, occurred after sixty years of age, but does not give figures showing how many of the thirty-four cases occurring before twenty were in patients younger than twelve years of age.

Schultz[3] gives a table of "organ distribution of tumors from the census statistics of the registration of states of the United States for the year 1914". Here we find that of 47,896 reported tumors, 413, or 1.1 per cent, occurred in patients under the age of fifteen years. Of these 413 tumors, only four, or 0.98 per cent, were of the ovary, which corresponds closely to Steffen's[7] figure, 1.1 per cent quoted above. In other words, about one per cent of all tumors occur in patients of early years; and of this one per cent, about one per cent are tumors of the ovary.

In Weil's[4] report covering the literature to 1904, there were 60 cases of which 24 patients were under five years of age. Downes[5] collected 26 additional cases from 1904 to 1921, and reported the successful removal of a non-malignant cyst of the ovary in a child seventeen months of age. Loeb[6] recorded 35 cases from 1921 to 1931, and in 1936 Loeb and Levy brought the report up to date and reported two cases. The incidence of cysts in these series was about 32 per cent. In Weil's series 32 per cent were malignant, as against 62 per cent in Downes' series. This discrepancy may be explained upon the basis of a more careful examination under the microscope. By such examination, many of the simple cysts have been found to be dermoids.

Probably the largest cyst reported during childhood occurred in Keen's patient[10]. The girl, fifteen years of age, had noticed a gradual abdominal enlargement for two years with pains in her

right side. She had been tapped twice. At the time of operation, the abdomen measured 49 centimeters in circumference. On April 30, 1893, after a small midline incision, a trocar was inserted and a large quantity of fluid was removed. The incision was then enlarged and a cyst with a broad base arising from the right ovary was removed. The solid mass weighed 27 pounds and the fluid 84 pounds, making a total of 111 pounds. The child made an uneventful recovery. No mention was made in the history as to whether the child had menstruated.

Steffen[7] tabulated 870 tumors occurring in childhood, and found only nine or 1.1 per cent of the ovary. In this group, 28 per cent were of the kidney; ten per cent of the brain; eleven per cent of the eyes and orbit; nine per cent of the bone; 6.7 per cent of the skin; 5.7 per cent of the stomach and liver; and three per cent or less of other organs. This shows the relative infrequency of tumors of the ovary in childhood as compared with other organs.

Lanman[8] reported in 1929 that of 12,260 admissions to the Surgical Service of the Children's Hospital, there were found only five cases of ovarian tumors. This gives some idea of the rarity of tumor of the ovary before twelve years of age, but shows that the condition exists.

Polak[9] in discussing embryomata says, "Dermoids of the ovary may develop in intra-uterine life or at any age. They are the most common variety of ovarian tumor found prior to puberty and they are especially prone to torsion of the pedicle." He states that both solid and cystic growths of the ovary may be either benign or malignant. Gardner[2] believes that one-half of ovarian tumors are of but minor clinical significance since they belong to the group of simple retention cysts; but "of the true ovarian neoplasms, one-fifth are definitely malignant, one-eighth are semi-malignant and the remaining two-thirds are quite benign, although any and all of them assume malignant characteristics at any time". It is probable that a careful microscopic examination of what appear to be only simple cysts in childhood will reveal a larger number of cysts that belong to the so-called embryomata, and therefore are to be considered at least potentially malignant. This was noted by Downes and Weil.

However, there is no difference of opinion in regard to treatment. Radical surgical removal is indicated, except in those cases of rapidly growing tumors with metastases. In such cases neither surgery, radium nor the x-ray seem to be of any avail. This is true especially in the solid tumors since it may be difficult to make a diagnosis until too late; but by education of the lay public at least some of these cases may reach the surgeon in time for successful radical removal.

CASE REPORT

The patient, twelve years of age, was seen in consultation with Dr. G. H. West on July 9, 1937. She was a well-developed girl, five feet, four inches in height, weighing 156 pounds. There was no history of menstruation. Her mother had died when the patient was four months old. The abdomen gave the appearance of a full term pregnancy. The patient had begun to lose weight the last six months, had shortness of breath and was unable to stoop over. The physical examination was irrelevant except for a large abdominal mass which seemed to press the diaphragm up and displace the heart. A diagnosis of ovarian cyst was made.

The patient was admitted to the hospital on July 15, 1937, and was operated upon under ether anesthesia. A large midline incision was made, but the tumor was so large it was impossible to deliver it in total. A trocar was plunged into the tumor and approximately ten liters of fluid were drawn off before we could deliver it in a mass. The sac was connected by a short pedicle to the right ovary which was a hard, firm mass approximately nine by six centimeters. This solid tumor



was removed, and was found to consist of the entire right ovary. The left ovary measured approximately eight by two centimeters and was removed. The abdomen was closed in the usual manner. After removal of the cyst, I again filled the sac with as much of the fluid as possible, and the tumor as seen in the accompanying il-

lustration weighed thirty-two pounds. The hemostats, which are ten and one-half inches in length, give some indication of the size. The patient made an uneventful recovery and was dismissed from the hospital July 29, 1937, with a weight of 121 pounds. She was last seen on May 31, 1938, at which time she seemed to be normal for her age. Her weight was 160 pounds. The girl has never menstruated.

The pathologic report was as follows: "The specimen consists of two very large ovaries and an enormous cyst which is attached to one of them. The cyst is collapsed and must have been larger than a good sized pumpkin when it was distended with fluid. Its walls measure from two to four millimeters in thickness. The inner lining is corrugated and has somewhat the appearance of gastric mucosa. The cyst is attached by a thick pedicle to a firm, markedly enlarged ovary. This is kidney-shaped and measures nine by six centimeters. The surface made by section of the organ is studded with round and oval cysts containing a clear fluid. These measure from four to two millimeters in diameter. The other ovary is also large and firm. It measures eight by two centimeters and its surface made by sections, also contains ovarian follicles in various stages of cystic degeneration. Microscopically, the section from the cyst wall is composed of adult fibrous tissue; the inner lining consists of a single layer of cuboidal cells, and the other section has the appearance of simple ovarian cysts. The diagnosis is simple cystic adenoma of the ovary (follicular)."

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CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

Hospital Staff Meeting of February 21, 1939

THE THORACOSCOPE AND CLOSED INTRAPLEURAL PNEUMONOLYSIS

Fred J. Jarvis, M.D., Iowa City
Department of Surgery

Since the introduction by Forlanini of Milan in 1882 of artificial pneumothorax in the treatment of pulmonary tuberculosis, it has become the most valuable and widely used of the procedures for collapse therapy which figure so prominently in the modern treatment of this disease. Between 40 and 50 per cent of all patients in sanitoria are at some time in the course of their disease under pneumothorax treatment. Another 20 per cent are considered as favorable candidates for this type of treatment, but pneumothorax cannot be induced because of obliteration of the pleural space by diffuse adhesions. About one in three attempts at pneumothorax is ineffective because of adhesions which interfere with satisfactory collapse. Early in the disease, proximity of the tuberculous process to the pleura, or its actual invasion, causes agglutination of the pleural surfaces with the formation of adhesions. The majority of these adhesions are directly over the diseased portions of the lung, usually about the apex, preventing collapse in just the portion of the lung in which collapse is most desired. Under the influence of pneumothorax and increasingly high intrapleural pressures, some of these adhesions can be stretched until collapse is effective. In the majority of patients, however, the pneumothorax must be abandoned and some other form of collapse therapy substituted.

In 1913, Jacobaeus of Stockholm devised an ingenious instrument for the division of these adhesions without wide opening of the pleural cavity. The thoracoscope used by members of the surgery staff of this hospital at the State Sanatorium (Oakdale) is similar to his original instrument. It consists of a telescope similar to the cystoscope which is introduced into the pleural cavity already distended with air, through an intercostal trocar. The pleural space may be inspected, and if adhesions favorable for division are present a long rod with an electrocautery tip is introduced through a second trocar. Under clear visual control the adhesions are divided with the electrocautery. The operation is done

under local anesthesia through inch-long skin incisions, and is not shocking to the patient.

The thoracoscope, in contrast to the gastroscope and peritoneoscope, is essentially an instrument of therapy rather than of diagnosis. The roentgen appearance of pleural adhesions in the presence of pneumothorax may, however, be extremely misleading. Oblique views will increase the number of adhesions visualized roentgenologically, since otherwise these adhesions may be posterior to the lung and hidden in the usual antero-posterior plate. With the thoracoscope many adhesions will be found which either because of their small size or posterior position cannot be seen on the x-ray film. The x-ray plate is most unreliable in determining the type of adhesions present. A broad band or veil-like adhesion may be seen only in its thickest portions, and in the x-ray plate may look like a series of string adhesions easily divisible, when in reality it cannot be divided by the cautery without undue danger to the patient. In this sense only, is the instrument of diagnostic value. About one in every three patients submitted to thoracoscopic examination will have adhesions technically impossible to divide.

Adhesions more than two centimeters in length which overlie a cavity, so that pneumothorax is ineffective in collapsing the cavity, constitute the major indication for thoracoscopy. Adhesions which place tension on the lung in the recently collapsed cavity prevent the healing of the tuberculous focus and represent a second indication. Soft, pneumonic lesions in a portion of the lung which is tugged upon with each respiration may occasionally respond to division of the offending adhesion. In bilateral disease, pneumothorax on the opposite side may be permitted by dividing apical adhesions and allowing effective collapse from lessened pressures on the one side.

The general condition of the patient rarely constitutes a contraindication to thoracoscopy. The operation is sufficiently innocuous, if properly performed, to be done on the poorest risk patient.

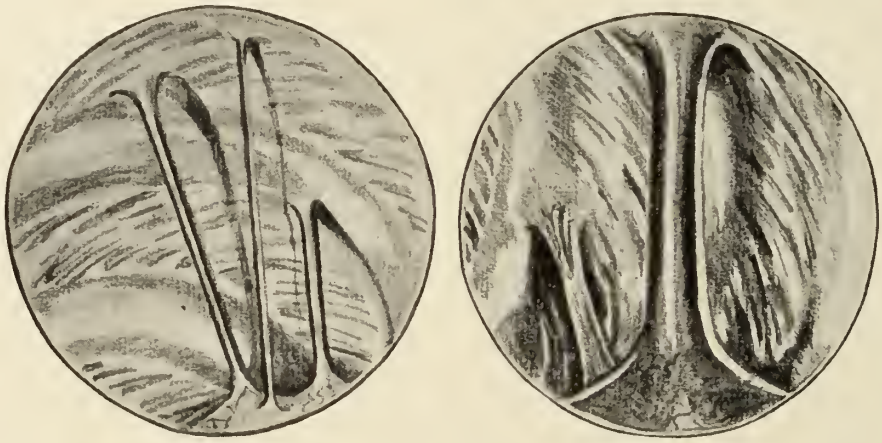


Fig. 1. The two types of adhesions most amenable to division as seen through the thoracoscope.



Fig. 2. The cone and band types into which lung tissue is usually drawn to a considerable distance. Frequently containing large vessels, they are divided at greater risk.

Very low vital capacity may make the operation dangerous because a sudden increase in the amount of lung collapsed may lower the vital capacity below the functional level and cause death. Pleural effusion and tuberculous empyema need not prevent the operation. In some cases the division of adhesions seems to influence favorably the formation of pleural fluid. The involvement of the pleura by tubercles near the base of the adhesion makes its division unwise.

Innocuous as the procedure may be, it is not one to be taken lightly. Knowledge and experience are necessary to determine the technical feasibility of dividing the adhesions once they are visualized. The narrow string or cordlike adhesions (Fig. 1) are avascular and their division is technically simple and safe. The lung may be drawn up in conelike fashion into others (Fig. 2). Auxiliary blood supply from the pleura through the adhesion may make the division dangerous. Wide apical bands may offer technical difficulties. All three of these types of adhesions must be divided near the thoracic wall. An intercostal vessel injured during the division of such an adhesion gave rise to fatal hemorrhage in one of our patients. The subclavian or internal mammary vessels or the azygos vein may be injured with fatal hemorrhage unless the thorax is promptly opened and the bleeding stopped. The surgeon undertaking such an operation must, therefore, be capable and equipped to open the thorax if necessary. The greatest judgment is essential in determining the feasibility of dividing adhesions. If they cannot be divided without undue risk to the patient, the operation must be abandoned and either open pneumonolysis performed or some other type of collapse therapy (i. e., thoracoplasty) resorted to. The most rigid sterile technic must be carried out, because the introduction of pyogenic organisms may precipitate a mixed tuberculous empyema with its tragic consequences.

Closed intrapleural pneumonlysis was first used at the Oakdale Sanatorium in April, 1937. During the year 1938, forty-three patients were treated by this method. In ten the operation was abandoned because of the extent and type of the adhesions. The remaining thirty-three were operated upon, with one death. In a similar series of 86 cases from the Hamilton County Tuberculosis Sanatorium, Cincinnati,* 74 patients were deemed to have operable adhesions and twelve were rejected. There were no operative deaths. In 85 per cent of these cases the pneumothorax was effective and the sputum became negative.

* Christiansen, J. N.: Personal communication.

GASTROSCOPY

Horace M. Korns, M.D., Iowa City
Department of Internal Medicine

The recent revival of interest in gastroscopy may be traced directly to the invention of the semiflexible gastroscope. The ease and assurance with which experts, such as Schindler, introduce this instrument into the stomach are amazing. The patient suffers very little discomfort and, if both the examiner and his assistant are skillful, there is no danger of puncturing the esophagus. The interior of the stomach is so clearly illuminated that the view which one obtains leaves little to be desired. For these reasons the method is being used ever more widely by gastro-enterologists and, as a result, we are beginning to realize that our former conceptions of the gross appearance of the gastric mucosa and of many lesions of the stomach are in need of considerable revision. As the experienced cystoscopist points out, a better idea of the condition of the bladder can be gained by looking through the cystoscope than by direct inspection of the interior of the viscus, either during life or after death. This is also true of the stomach; furthermore, the postmortem appearance of gastric lesions is much more likely to be distorted by autolysis than is that of bladder lesions. In fact, as Schindler has shown, it is doubtful if perfectly normal gastric mucosa has ever been seen under the microscope. The closest approximation to the normal is seen in biopsy specimens which have been removed by a special surgical technic.

In gastroscopy, as with all endoscopic methods, the results depend entirely on the examiner's ability to recognize what he sees, which means that extensive experience is necessary. It is unfortunate that the instrument does not provide sufficient light for color photography. Gastroscopic diagnoses depend so much on the natural color of the interior of the stomach and its lesions that ordinary photographs cannot adequately portray the conditions which exist. Reproductions of gastroscopic pictures must therefore be made by an artist.

The gastroscopic method supplements, but does not replace, the roentgenologic and other diagnostic methods. Heretofore, our conception of the various forms of gastritis has been nebulous, to say the least; in the study of this disease gastroscopic examination has proved particularly useful. Also, in many instances it enables us to make a diagnosis of carcinoma of the stomach before the lesion can be detected roentgenologically, and it is extremely valuable in cases of

gastric ulcer and hemorrhage from the stomach.

It is to be hoped that a much larger proportion of our patients with gastric symptoms will soon enjoy the advantages which attend the use of this important diagnostic method.

PERITONEOSCOPY

R. H. FLOCKS, M.D., Iowa City
Department of Urology

Peritoneoscopy is the procedure of visualization of the peritoneal cavity and its contents by means of an optical instrument. Although this method of examination was first carried out successfully by Kelling in 1901 and since that time repeatedly by others, it was not generally used or considered of much value. In recent years, however, the development of a perfected instrument giving excellent vision as well as permitting minor operative procedures, including biopsy, has renewed interest in peritoneoscopy. Anderson, Benedict, Thieme and especially Ruddock, of Los Angeles, have recently published enthusiastic reports of large series of cases as to the value of the procedure. These men have evaluated the procedure in different types of conditions, have standardized the technic for performing the procedure, have emphasized the dangers and contraindications and have thus demonstrated the importance of the procedure for the diagnosis and treatment of disease involving any portion of the abdomen.

Peritoneoscopic examination is not intended to displace any of the diagnostic measures in general use. It does, however, make possible accurate diagnoses by biopsy without subjecting the patient to the discomfort and risk of an exploratory laparotomy. Peritoneoscopy is a minor procedure performed under local anesthesia, requiring hospitalization of only one day as compared to ten to fourteen days for a laparotomy. There is no dietary restriction, little discomfort, the mortality rate is low, 0.2 per cent and, therefore, it is a far safer procedure than an exploratory laparotomy. Laparotomy has the advantage of allowing a more thorough examination including palpation, and permitting the completion of whatever operative procedures may be indicated.

Peritoneoscopy has found its greatest use in the following group of conditions: cirrhosis of the liver, splenomegalia, malignancy of the liver, suspected abdominal malignancies, the identification of unknown masses, ascites of unknown origin, tuberculous peritonitis, and chronic conditions involving the pelvis in the female and male. The diagnostic accuracy attained with the instrument has been very high—a great deal better than clinical diagnosis without laparotomy. The procedure on the whole has found its greatest use in cirrhosis of the liver, and malignancy of the liver and stomach. Moreover, in many patients where the presumptive clinical diagnosis contraindicates operation, peritoneoscopy can be used with little danger to the patient and with the very excellent possibility that an accurate biopsy and therefore accurate diagnosis and prognosis can be made.

The apparatus for peritoneoscopy as used by Ruddock is as follows: sheath; a bistoury tipped obturator which fits the sheath; a telescope made to fit the sheath; a biopsy forceps; a fluid evacuator; a small needle trocar for introduction of pneumoperitoneum; special Rehfuss tube with an electric light at the tip; batteries; high frequency current generator; and one Baumenometer bulb. The patient is prepared as for a laparotomy. The operation is carried out on a movable table

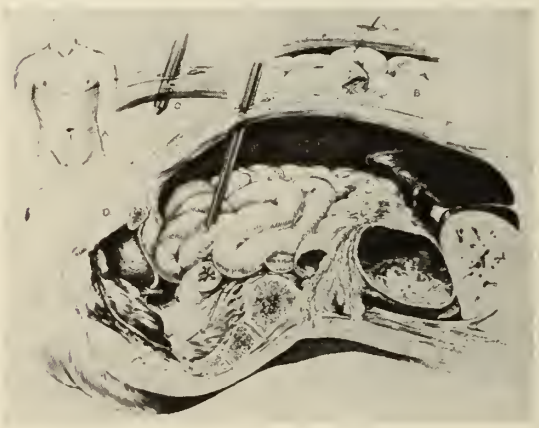


Fig. 1. Technic of peritoneoscopy. (After Ruddock.)

and in a darkened operating room. If adhesions due to previous operations are not present the best site of puncture is a point just below the umbilicus in the midline. This region is infiltrated with novocain and a small incision large enough to admit the sheath snugly is made and is carried down until the fascial layers are nicked. The trocar needle is then inserted into the peritoneum and the pneumoperitoneum is instituted. The needle is removed and the sheath with the bistoury obturator is inserted into the abdominal cavity. At this time it is necessary to be sure that the abdominal wall is tense and fixed by distention of the peritoneal cavity with air. This permits introduction of the sheath in a careful and slow manner and lessens the possibility of injuring the bowel. In addition, the instrument should be directed to either side of the vertebral column so

that sudden entrance into the cavity will not injure vital structures by compressing them against the spine. The Baumenometer bulb is attached to the sheath and distention of the peritoneal cavity is thus controlled. With the introduction of the telescope visualization may then be carried out. (Figs. 1, 2 and 3.)

In visualizing the different portions of the abdominal cavity a large measure of success is obtained only when a large air space is present, thus facilitating movement of the sheath in the abdomen. Moreover, the table should be of the type which can be tilted in any direction so that different portions of the abdominal cavity can be examined more easily. Thus the Trendelenberg position is necessary in the examination of the pelvis, and Fowler's position is necessary in the

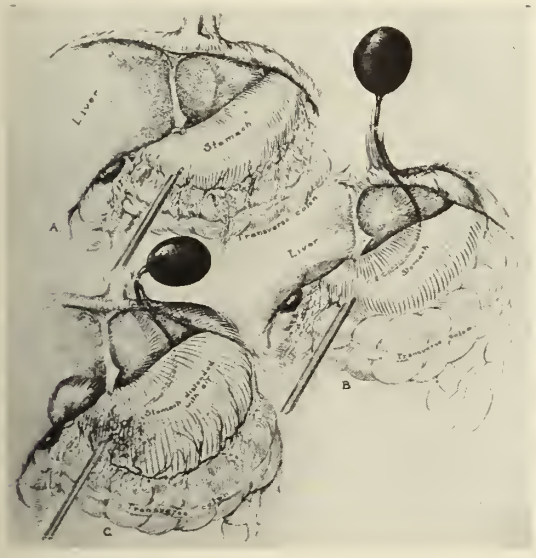


Fig. 2. Illustrating the method of transillumination of the stomach with visualization of the stomach and adjacent structures through the peritoneoscope. (After Ruddock.)

examination of the liver, diaphragm, and so forth. Manipulation of the pelvic organs and transillumination of the stomach and colon by assistants are helpful in the examination of these organs. (Fig. 4.)

If a biopsy is desired the biopsy forceps is introduced through the sheath, tissue is removed, and the denuded area thoroughly fulgurated. Fulguration must be thorough to prevent late bleeding. The only death in Ruddock's series of 500 patients occurred following biopsy from late bleeding of the liver. Adhesions, until they are cut, may prevent satisfactory peritoneoscopic examination. This can be done under direct vision. On occasions it may be necessary to cut them in order to facilitate movement of the sheath. In other conditions the adhesions may be the source of the patient's symptoms and cutting them will effect a cure.

There are relatively few dangers connected with the procedure. When the patients are carefully selected very little trouble is to be expected. Dangers divide themselves into three groups. Patients with serious cardiac and lung conditions should not be subjected to this procedure because filling the abdominal cavity with air brings about a certain amount of thoracic and diaphragmatic embarrassment. This may have serious consequences and should be avoided. A trained anesthetist should observe the patient constantly during the procedure in order to care for respiratory and cardiac embarrassment associated with the pneumoperitoneum. The second danger is that the bowel may be punctured either by the trocar needle or the instrument itself. This can nearly always be avoided by choosing the site of puncture away from a previous operative scar and by intro-



Fig. 3. Views as obtained through the peritoneoscope. A. Metastases to the liver. B. Fibromyoma of the uterus. C. Ovarian cyst. D. Papillary cystadenoma of the ovary with peritoneal implantations. E. Intra-abdominal adhesions. Note how adhesions between the omentum and parietal peritoneum are stretched by the production of the pneumoperitoneum. (After Ruddock.)

ducing the instrument carefully and slowly after a very good pneumoperitoneum has been established. If these precautions are observed the bowel should not be punctured. If puncture does occur the instrument should be left in place, an abdominal incision made immediately, the instrument removed under vision and the hole in the bowel closed. Ruddock had eight such cases. No serious sequelae took place and in each case the bowel had been found firmly adherent to the parietal peritoneum at the point of puncture. The third source of danger is bleeding following the removal of a biopsy specimen. Ruddock's only death in 500 patients occurred from hemorrhage which followed removal of a carcinomatous nodule in the liver. This was one of his early patients and he believes that more thorough ful-

guration would have prevented the fatal outcome. On the whole, therefore, peritoneoscopy is reported to carry very little risk except in patients with advanced pulmonary or cardiac disease.

There are few contraindications to peritoneoscopy. Three groups are to be noted: first, serious cardiac or pulmonary disease, as noted above; second, numerous abdominal adhesions which would make manipulation of the sheath and therefore examination of the abdomen practically impossible; and third, acute inflammatory conditions which might be spread by the instrument and the manipulation attendant to its use.

From a review of the work of Benedict, Anderson, Thieme and especially Ruddock, the following can be said with regard to peritoneoscopic examination and treatment. Peritoneoscopy permits one to do three things: first, make a rapid visual examination of the contents of the abdomen; second, remove tissue for microscopic ex-



Fig. 4. Technic of pelvic examinations with view of the pelvic organs which is obtained after vaginal manipulations of these organs to aid in visualization of the pelvic contents. (After Ruddock.)

amination; and third, carry out certain simple operative procedures. Peritoneoscopic examination is a relatively mild procedure which produces relatively little discomfort to the patient. It has many economic features; few days in the hospital, few dressings, and so forth. Its diagnostic accuracy is high. In 409 patients we find a diagnostic accuracy of 91 per cent as compared to 64 per cent clinical accuracy.[4] This is particularly true in conditions involving the liver. The procedure is a highly technical one, requiring a great deal of skillful manipulation of the instrument for the examination and the execution of operative procedures. Moreover, considerable experience is required to recognize and differentiate through the lens system of the instrument the macroscopic appearances of pathologic processes. There have been some[3 and 4] who have maintained that a urologist should be present at the performance of this procedure because of his familiarity with this type of instrument.

On the whole, therefore, the peritoneoscope is a valuable addition to our armamentarium. Experience in its use will be necessary, however, before its value can be fully realized.

The author wishes to express appreciation to Dr. John C. Ruddock of Los Angeles for his kind demonstrations of the procedure of peritoneoscopy and for his permission to reproduce material from his paper. He also wants to thank the management of Surgery, Gynecology and Obstetrics for permission to reproduce some of the illustrations.

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Discussion

Dr. Dulin: I believe that peritoneoscopy through a small incision in the abdominal wall, has a definite place in certain diagnostic problems. I am not so much concerned with the technical part of the procedure as I am of one's ability to recognize the pathology encountered. Even through a large exploratory incision, when one has visual and tactile sensations to aid him, difficulties often arise in diagnosis. There is a possibility of error in a questionably operable neoplasm. From experience one learns that the larger and more adequate the exploratory incision, the more likely the surgeon is to tackle a borderline operable tumor. Accidents will surely occur with the use of the instrument. Most of these will be perforation of the bowel or hemorrhage. According to reports, these are relatively uncommon and Ruddock's eight mishaps did not include a fatality. Thieme of the University of Michigan has recently reported fifty examinations with no mortality or morbidity. Although I know very little about the procedure, I believe there is a place for the instrument for diagnostic studies in institutions.

Dr. Plass: This subject is very interesting and the definite diagnostic possibilities in these devices are obvious. My interest has been very largely confined to discussion as to whether we should introduce some of these devices in this institution. About two weeks ago we had a meeting of those interested in peritoneoscopy and prepared a memorial for presentation to the Administration, suggesting that it might be advisable to purchase a peritoneoscope and to designate a peritoneoscopy team to pool their experiences for the benefit of all of us. Mr. Neff is here. Perhaps he will carry on from the economic side.

Dr. Mengert: I am very much interested in seeing this device introduced since it should have great applicability in gynecology. I believe it would be especially valuable in the diagnosis of carcinoma of the ovary. It might very well give us an opportunity to make a diagnosis and give preoperative irradiation.

Dr. Alcock: Anything that has a lens on it whether it is a microscope, a telescope, a pair of binoculars, or a camera always seems to have a particular fascination for me. More than that, when you have an examining instrument with a lens in it and you add electric light to it, it seems to become more intriguing; therefore, I am more than ordinarily interested in these instruments we have been hearing about this afternoon and I would like to call your attention to two or three things about them. The efficiency of any instrument made for the examination of a body cavity depends upon two things; first, the amount of light it will introduce into the cavity; and, second, the size of the lens system that it is possible to use through the instrument. The amount of light which can be introduced is determined by the size of the lens system, that is, the size of the lamp which can be put through the instrument, and the field of vision is in exact proportion to this area. Therefore, the efficiency of the instrument is largely determined by its size. In the cystoscope the size of the instrument is in turn determined by the caliber of the urethra, but when it comes to the peritoneoscope, or the endoscope for the thorax, one does not have the problem of limitation in size of the instrument. If one wishes to introduce a larger caliber peritoneoscope into the abdomen, he makes a larger hole in the abdomen. The same holds true with the endoscope for the pleural cavity. He cannot only make a larger opening but he can also make half a dozen holes and introduce enough lamps to light it up like a crystal ballroom.

One can examine the interior of the bladder much more efficiently and accurately with a cystoscope than by cutting the bladder wide open in front of him. There are several reasons for this and I believe that these same reasons may apply to the examination of the peritoneal cavity. In the first place he can illuminate the bladder with the cystoscope lamp much better than he can with the light in the operating room. In the second place, with the cystoscope he can balloon out the bladder and iron out all the folds. The third reason is that in using a telescopic instrument the eye is actually at the lens at the distal end of the instrument and not two or three feet away, as it is in an exploratory operation in the operating room. I have an idea that a very satisfactory examination of the abdomen can be made with the peritoneoscope. When the peritoneal cavity is completely distended by air a condition is created that is similar to the condition present at an exploratory operation when an enormously long incision has been made and all of the walls are equally retracted in every direction by invisible retractors.

I would like to mention one other point. In using these electrically lighted telescopic instruments one must develop a peculiar sensation of orientation. In this particular field of visualization one must see largely with his mind rather than just with the retina of his eye. In order to develop this peculiar orientation one must have an enormous amount of experience. Perhaps in using the peritoneoscope one's observations would be of little value until after one had examined at least two hundred abdomens. Therefore, if we are to introduce the peritoneoscope here I feel it would be advisable to put the instrument into the hands of one man and allow him to accumulate all of the experiences, rather than to put it in the hands of several men and try to draw conclusions by pooling their results.

Mr. Neff: I hope in time we will have funds to secure these instruments, which are not only fascinating but apparently essential in keeping up to date in matters of medical diagnosis. I have been very much interested in what Dr. Alcock has said about training someone who can efficiently and properly operate these instruments. We hope to find some means whereby these instruments may be procured.

Dr. Flocks: During the last two years several papers have been published on the use of the peritoneoscope. Two of these were from University Hospitals; one, from the Massachusetts General Hospital in Boston; and the other from the University Hospital at Ann Arbor, Michigan. All of these reports have been enthusiastic with regard to the procedure and have made the statement that as experience with peritoneoscopy was gained more and more cases were found in which the procedure was of great help. I have had no personal experience with the method except what I observed in Dr. Ruddock's clinic in Los Angeles.

THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

FUSION AND CALCIFICATION OF THE AORTIC CUSPS WITH STENOSIS

H. A. Stribley, M.D., Dubuque

The cause of calcification of the aortic cusps is still in doubt; some believe it follows endocarditis, others that it is a metabolic disorder. The case to be described is of interest because of the marked cardiac hypertrophy and because of the extent of the calcareous changes in the aortic cusps in a middle-aged man without a history indicating endocarditis.

CASE REPORT

The patient, a white man thirty-eight years of age, was admitted to The Finley Hospital January 28, 1939, with a complaint of "shortness of breath, difficulty in breathing, with a hacking cough and the spitting up of bright red blood during the last ten days."

Family History: The patient's mother and father were dead of unknown causes. There was no history of diabetes, tuberculosis, epilepsy or heart disease.

Past History: The patient stated that he had always been well until about six months before admission. He was asked especially in regard to conditions which might explain the etiology of the cardiac condition and denied ever having had rheumatic fever, tonsillitis, scarlet fever or syphilis.

Present Illness: Six months previous to his admission he had had an attack during which he became short of breath and wheezed so much that he himself made a diagnosis of asthma. The attack lasted about a week. Ever since that time he had noticed that on exertion he became short of breath. Ten days before admission he developed what he termed a "cold in the head." This started with chilly sensations, a slight cough which gradually became more severe and finally caused the expectoration of bright blood-tinged sputum. He ached over his entire body and stayed in bed for a few days. He was about the house for short intervals but each time became so fatigued he returned to bed. After about a week he became worse and the dyspnea became so marked it was necessary for him to sit up in bed at night. He coughed up more blood-streaked sputum, and finally decided to see a physician.

Physical Examination: The patient was a middle-aged, very sick appearing man with a lemon-yellow tint to his skin. His breathing was labored and short. His mental state seemed normal. The eyes, ears and nose were negative. There were several carious teeth and the gums showed some pyorrhea. There was no rigidity of the neck and the thyroid gland and cervical nodes were not enlarged. The jugular veins, especially the right, were prominent; they refilled after stripping. The thorax was symmetrical and there was no definite bulging of the intercostal spaces on the left side. Respirations were short and jerky. The lungs were resonant over both upper fronts and axillae. There was a small area of dulness below the right angle of the scapula, extending down into the right axilla. On auscultation sibilant râles were heard over both upper fronts and back where the breath sounds were vesicular. There were many crepitant and medium moist râles at both bases but especially on the right side. There was a small area of tubular breathing at the right angle of the scapula. The point of maximal impulse was in the seventh interspace in the mid-axillary line. On percussion the cardiac dulness was markedly enlarged to the left. On auscultation there was a double murmur heard at the level of the third rib on the right side and over the sternum. It was systolic and diastolic in time; the systolic murmur was loud and rough; the diastolic not so loud or rough. The aortic second sound was present but less intense than is usually encountered in a man the age of the patient. There was also a systolic murmur with a tone different than that at the aortic area heard over the apex of the heart. The abdomen was slightly full. The edge of the liver extended one hand's breadth below the right costal margin. The spleen could not be palpated. There was no definite abdominal fluid wave and the veins were not prominent. The extremities were edematous and pitted on pressure. The reflexes were normal and the sensory system was intact. A diagnosis of a decompensating, enlarged heart with aortic disease and possibly pericarditis was made and he was sent to the hospital.

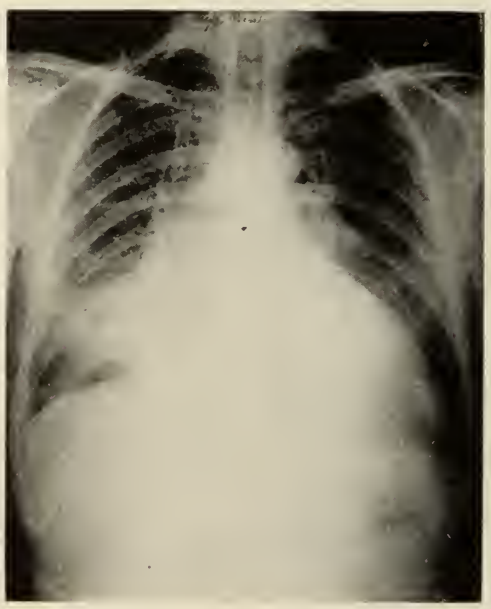


Fig. 1. X-ray indicating the enlargement of the heart.

Laboratory Examination: The white blood count was 9,000; the urine showed ten milligrams albumin per 100 cubic centimeters, occasional granular casts and red cells, but was negative for acetone, sugar and bile.

X-ray Examination: There was a large dense shadow in the mid-portion of the right lung in the region of the lower half of the middle lobe. The appearance was that of a lobar pneumonia. Both lungs showed some congestion. The heart shadow was enormously enlarged, the greatest enlargement being to the left (Fig. 1); it appeared to be mostly in the left ventricle. A pericardial effusion was considered.

Course in Hospital: In spite of rest and medication the patient's condition became progressive-

ly weaker. On the fourth day pericardotomy was considered but a consultant advised against it because of the patient's critical condition and because it was thought the aortic valve disease was the basis of his symptoms. His pulse, which was 74 upon admission, soon rose to 130 per minute and became very irregular. At times it was impossible to count. It was noted that the pulse would rise gradually and fall away slowly, but it never had the characteristics of a "Corrigan pulse." The temperature never rose over one degree. The patient died suddenly on the fifth day in the hospital.

Necropsy Abstract: The abdomen contained 250 centimeters of clear fluid. The pericardial sac was enormous in size and in its greatest diameter measured twenty-two centimeters; the shorter diameter was sixteen centimeters. It contained about 175 cubic centimeters of clear, straw-colored fluid and the serous surfaces were smooth and glistening. The heart was greatly enlarged and this rather than the fluid accounted for the external appearance of the pericardial sac. The superior and inferior vena cavae were greatly dilated, as was the right heart. On opening the heart all chambers were found greatly dilated but especially the right and left auricles and the left ventricle. All contained large amounts of dark red and "chicken fat" clots. A small, grayish, friable clot found in the right auricle was taken for microscopic study. The wall of the right ventricle averaged six millimeters; that of the left, twenty millimeters. The mitral cusps seemed slightly thickened and the chorda tendineae which were semi-opaque and milky, inserted directly on the rolled edge. The aortic cusps presented a very striking picture. They were thickened, fused and calcified, forming a rigid ring around a narrow slit which represented the orifice. They had a coral-like appearance on the upper and lower surfaces and the calcified nodules extended for a short distance up into the aorta and down into the left ventricle. (Figs. 2 and 3.) There was also a superficially roughened area over the intima of the aorta. The orifices of the coronary artery were widely patent and not involved in the process, but there was slight scarring of the myocardium of the left ventricle. Aside from the area noted, the aorta was thin, smooth and elastic. The heart weighed 1,000 grams. The middle lobe of the right lung presented several moderate sized, hemorrhagic infarcts, but otherwise each lung showed only acute congestion. A solitary cyst was found at the lower pole of the left kidney. The other organs showed chronic passive congestion. The microscopic studies showed the auricular clot to be ante mortem. There was no evidence of inflammatory reaction in either the aortic or the mitral cusps.



Fig. 2. Photograph of the left side of the heart showing dilatation, hypertrophy and calcification of the aortic cusps.



Fig. 3. Higher power photograph showing thickening, fusion and calcification of the aortic cusps; the dark area is postmortem clot.

Anatomic Diagnosis

Primary: 1. Fusion and calcification of the aortic cusps (stenosis and regurgitation); healed mitral endocarditis; cardiac dilatation and hypertrophy; chronic passive congestion of all the viscera. 2. Thrombosis of the right auricle; right pulmonary infarcts; pericardial effusion; ascites; edema of the lower extremities. Subsidiary: Early arteriosclerosis; right fibrous pleurisy; solitary cyst of the left kidney.

Summary: This is an example of valvular heart disease with a rapidly progressive downhill course in a comparatively young man. His symptoms dated back only about seven months and clinically the picture was that of aortic stenosis with cardiac hypertrophy. At necropsy the aortic cusps were thickened, fused and calcified so that a mere slit remained. There was no history of an infection that might have caused endocarditis, although the mitral cusps suggested an old, healed process. Therefore the etiology must remain in doubt.

COMMENT

In recent years there have been numerous reports of calcification of the aortic cusps. Christian[1] reported 21 cases and Margolis, Ziellessen and Barnes[2] reported 42 cases observed at necropsy. In our series of 550 necropsies there have been four cases similar to the one reported above; six cases with definite endocarditis, and fourteen cases in elderly patients with marked stiffening of the aortic cusps judged to be due to arteriosclerosis.

Etiology: Much of the recent literature has been concerned with the etiology of the condition. According to Tuohy and Eckman[3] who reported six cases, "independent of syphilis and probably independent of rheumatic fever, a third agency makes the aortic cusps so rigid and unyielding as to reproduce the most extreme grades of stenosis. It does so very gradually and without signs of heart infection or early congestive failure. This lesion is becoming known under the name of 'calcareous nodules' in the aortic valves. The infiltration with calcium may begin earlier than the usual atheromatous changes; it is seen most typically in patients beyond the age at which multiple rheumatic valve defects are likely to occur." Sparks and Evans[4] state that calcification to a lesser degree is associated with atheroma, and results from valvulitis, either rheumatic, subacute bacterial or syphilitic in nature. In the nodular calcified group the portion of the valve near the aortic attachment is affected and disease of the adjoining aorta is usually absent. In atheroma the attached portion of the valve is most likely to be calcified while in rheumatic valvulitis the free edge of the valve contains the calcium deposits. In subacute bacterial endocarditis, bizarre areas of calcification are not uncommonly seen. While theoretically syphilis might be considered an etiologic factor because of the predilection for the organisms to attack the aortic valve, actually it is not considered as a factor in this type of aortic disease by the majority of authorities. Willius[5] is of the opinion that aortic stenosis never results from syphilis; the result of a syphilitic lesion is insufficiency.

Diagnosis: The diagnosis should be considered in every case of aortic stenosis. In younger individuals there is usually an associated cardiac hypertrophy. When suspected the diagnosis may be confirmed by appropriate fluoroscopic studies. If there is a sufficient degree of calcium present it may also be demonstrated in x-ray films. Both methods have proved successful in several cases in this hospital and Sosman[6] reported a series of twenty-three cases in which the diagnosis was made during life.

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LAST CALL TO HOBBYISTS

There is still some available space in the 1939 Doctors' Hobby Exhibit at the coming annual session of the Iowa State Medical Society to be held in Des Moines at the Hotel Fort Des Moines, April 25, 26 and 27. Collections of coins, stamps, books, photographs, ship models, etc., are welcome. Bring your hobby to the state meeting, but please reserve space at once by writing Dr. Julian M. Bruner, in care of the central office, 505 Bankers Trust Building, Des Moines, Iowa.

VACANCIES IN IOWA DISTRICT CCC

The Iowa District CCC, which embraces all of Iowa, and parts of Minnesota and Missouri, will have three or four vacancies for the position of Camp Surgeon in CCC camps in the near future. Any graduate of a Class A medical school, with a license in any of the states, or a National Board Certificate, is eligible for the position. Members of the Officers Reserve Corps, Medical Section, will be ordered to active duty in grades up to and including Captain. Those not having commissions will be hired as contract surgeons. Complete information may be obtained by writing the office of the District Surgeon, Fort Des Moines, Iowa.

State Department of Health

Walter L. Bierring

Meeting of the Iowa Public Health Association

The Thirteenth Annual Meeting of the Iowa Public Health Association will take place Monday, April 24, 1939, with headquarters at Hotel Savery, Des Moines. During the morning session a number of papers will be presented which will be of special interest to attending physicians as well as to local health officers. Subjects which will be discussed include a recent food-borne epidemic of typhoid fever in Iowa, throat culture findings on scarlet fever patients and trichinalis infestation in rats in relation to trichiniasis (trichinosis) in human beings. A progress report will be made on the venereal disease program of the State Department of Health. District and county health work will be considered from the standpoint of the public health nurse, the sanitary engineer and the medical director.

During the noon luncheon meeting at which E. M. Myers, M.D., of Boone, President of the State Board of Health, will preside, discussion will center about rural health needs and other public health problems.

A guest speaker at the afternoon program will be R. R. Jones, M.D., Surgeon, United States Public Health Service, who will discuss medical aspects of industrial hygiene. A report will be made on pneumonia control measures of the State Department of Health. Miss Margaret Arnstein, R.N., Director of Public Health Nursing in the Department of Preventive Medicine and Public Health, University of Minnesota, will present the work of the public health nurse in relation to pneumonia. A new motion picture film will portray the present status of antipneumococcic serum and sulfapyridine in the management of the pneumonias.

Physicians planning to attend the Eighty-eighth Annual Session of the Iowa State Medical Society are cordially invited to come to Des Moines a day earlier and attend the public health meeting. The tentative program of this meeting is as follows:

Morning Session—Florentine Room

W. S. Petty, M.D., Sioux City, President, Iowa Public Health Association, Presiding

9:00 Registration; Reading of Minutes; Announcements.

9:30 Report of a Food-borne Epidemic of Typhoid Fever—Paul Stephen, M.D., Des Moines, Assistant Director, Division of Preventable Diseases, Iowa State Department of Health.

9:45 Laboratory Findings on Throat Cultures from Scarlet Fever Patients—Ralph H. Heeren, M.D., Iowa City, Assistant Professor, Hygiene and Preventive Medicine, University of Iowa.

10:00 Trichina Larvae in Rats in Relation to Trichiniasis (Trichinosis) in Man—L. O. Nolf, Ph.D., Iowa City, Assistant Professor Zoology, University of Iowa.

10:20 Progress in Venereal Disease Control Measures—Robert F. Hansen, M.D., C.P.H., Des Moines, Director, Division of Venereal Disease Control, Iowa State Department of Health.

10:40 The Clinic in the Venereal Disease Program—Frank D. McCarthy, M.D., Sioux City.

11:00 Observations on Whole-Time Public Health Work in Iowa—W. S. Petty, M.D., Sioux City.

11:15 The Public Health Nurse in District and County Health Work—Miss Hazel Roberts, R.N., Manchester, Supervisory Nurse, Health District No. 3.

11:30 The Sanitary Engineer in District and County Health Work—C. E. Richey, B.S., Centerville, District Engineer, Health District No. 2.

Discussion: Marvin H. Haygood, M.D., C.P.H., Des Moines, Director of Local Health Services, Iowa State Department of Health.

Noon Luncheon Session—Club Room

E. M. Myers, M.D., Boone, President, Iowa State Board of Health, Presiding

Address: Iowa's Rural Health Needs—Mrs. Raymond Sayre, Ackworth, State Chairman Farm Bureau Committee Women.

Health Queries and Replies.

Afternoon Session—Florentine Room

Miss Margaret Van Ackeren, R.N., Des Moines, Assistant Director, Division of Public Health Nursing, Iowa State Department of Health, Presiding

2:00 Medical Aspects of Industrial Hygiene—R. R. Jones, M.D., Washington, D. C., Surgeon, United States Public Health Service.

2:30 Progress in the Control of Pneumonia—Carl F. Jordan, M.D., C.P.H., Des Moines, Director, Division of Preventable Diseases and Epidemiologist, Iowa State Department of Health.

3:00 Public Health Nursing in Relation to Control of Pneumonia—Miss Margaret Arnstein, Minneapolis, Minnesota, Director, Course in Public Health Nursing, Department of Preventive Medicine and Public Health, University of Minnesota.

3:30 The Present Status of Antipneumococcic Serum and Sulfapyridine in the Management of the Pneumonias—(Moving Picture Demonstration)—F. E. Schmidt, M.D., Chicago, Illinois, Member Research Staff, Lederle Laboratories.

TYPING STATIONS BOOST PNEUMONIA REPORTS

A gratifying increase in reported cases of pneumococcic pneumonia has occurred in recent months. Credit for the more complete reporting of pneumonia is due largely to the many typing centers in hospital and other laboratories distributed throughout the state. As described in the March number of the JOURNAL, page 123, typing centers forward a special report card to the State Department of Health at the time when the type of pneumonia is determined. The figures in the following table indicate pneumonia cases of all forms as reported to the State Department of Health for the first three months of 1937, 1938 and 1939.

TABLE I

Reporting of Pneumonia (all forms) in Iowa

Year	January	February	March	Total
1937	*385	42	13	440
1938	45	95	106	246
1939	210	193	280	683

*Many cases complicating influenza epidemic.

REPORTING OF MEASLES

Press reports indicate that measles is epidemic at this time in many Iowa communities. Official reports to the State Department of Health show major prevalence of the disease in counties in northwestern, western, southwestern, eastern, northeastern and central Iowa. It is desirable that reporting of measles be as complete as possible, in order that the department's Weekly Morbidity Report may reflect accurately disease prevalence in all of the counties, and so that greater public interest may be aroused in preventive measures.

MEASLES IMMUNE SERUM AVAILABLE

The State Department of Health desires to acquaint all Iowa physicians with the availability of measles (human immune or convalescent) serum. The serum is processed from blood collected within four months after the donor has recovered from an attack of the disease. The State Department of Health Serum Center distributes the serum on request, directly to the attending physician. Ten liters of serum are now available to meet the anticipated demand for serum during the coming weeks.

Since measles immune serum confers a passive immunity of two to three weeks' duration, it is usually advisable to ensure a mild, uncomplicated attack giving active immunity. This can be accomplished by administering the serum between the fourth and eighth days after exposure. Five cubic centimeters should be given to children under five years of age; ten cubic centimeters to those between five and fourteen years of age; and fifteen or twenty cubic centimeters to young or older adults. Serum should be administered before the fourth day after exposure for cases in which complete protection is desirable. Serum therapy of measles after onset of the infection has been instituted in relatively few cases. However, physicians who have used human immune serum therapeutically, believe that it is of definite value if given early, if possible before appearance of the rash.

Physicians desiring convalescent measles serum may obtain the same through letter, by telephone or telegram to the Iowa State Department of Health, Des Moines. The telephone number from 8:00 a. m. to 5:00 p. m. on week days, is 4-9111, Extension 137. After 5:00 p. m. on week days, Saturday afternoons or Sundays, requests for serum will be answered through Des Moines telephone numbers 5-2621 or 7-1417.

PREVALENCE OF DISEASE

	Feb. '39	Jan. '39	Feb. '38	Most Cases Reported From
Diphtheria	29	40	22	Black Hawk, Webster
Scarlet Fever	595	528	998	Polk, Black Hawk, Story
Typhoid Fever	3	5	5	Appanoose, Clay, Palo Alto
Smallpox	180	155	171	Marshall, Scott, Hardin
Measles	687	612	264	Mills, Woodbury, Plymouth
Whooping Cough	86	73	117	Woodbury, Lee, Iowa
Cerebrospinal Meningitis	1	1	7	Jasper
Chickenpox	446	558	352	Union, Dubuque
Mumps	234	143	56	(For State)
Influenza	549	16	49	(For State)
Poliomyelitis	0	0	0	
Tularemia	2	16	1	Muscatine, Polk
Tuberculosis (Pulmonary)	56	97	54	(For State)
Undulant Fever	6	4	10	(For State)
Gonorrhea	106	122	252	(For State)
Syphilis	222	230	280	(For State)

The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

Lee Forrest Hill, Editor.....Des Moines
Ralph R. Simmons, Associate Editor.....Des Moines

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TO THE MEMBERS OF THE IOWA STATE MEDICAL SOCIETY

The frequent choice of Des Moines as a meeting place for the Iowa State Medical Society is a never failing source of satisfaction to the members of the Polk County Medical Society. We enjoy the opportunity for personal contact with friends in the profession whom we would otherwise see much less often. We appreciate the opportunity to listen to physicians of distinction whom you bring to the annual meeting so regularly. We hope your response to our most cordial welcome to Des Moines will help to make this session an outstanding event.

Russell C. Doolittle, M.D., President
Polk County Medical Society.

THE ANNUAL SESSION

On April 25, 26 and 27 the Iowa State Medical Society convenes at Des Moines for its eighty-eighth annual session. Elsewhere in this issue of the Journal is printed the complete program. Even casual perusal of the scheduled speakers and subjects is sufficient to register the impression that this year's program committee has really "gone to town". For guest speakers they have secured men of national and international prominence. Few of the members of our society will want to miss the opportunity of listening to addresses by such well known leaders in the medical world as Dr. Lahey and Dr. Weiss of Boston, to single out only two among the group of distinguished speakers who will visit us from other states.

It is trite to comment upon the tremendous advances being made by medical science, and to point out the utter impossibility of any one mind being able to keep pace with all the developments in even one branch of medicine, let alone the several which enter into general practice. Everyone realizes that postgraduate medical education has, therefore, come to assume a major position, ranking in importance with undergraduate medical education. In the annual sessions of state medical associations postgraduate medical education achieves one of its greatest opportunities, because the latest and presumably the most useful concepts in scientific knowledge in many fields are brought to the door of the practicing physician. Unlike national conventions, attendance at which requires many miles of travel and frequently the expenditure of more time away from practice than many physicians feel they can afford, state conventions are conveniently located, and can often be attended day by day.

One should not overlook the contribution made by the scientific and commercial exhibits in the field of postgraduate education. A great deal of time and thought go into the preparation of these exhibits, and the physician who takes the time to enter the booths and listen to willing explanations and demonstrations will find himself well repaid. The Journal is informed that the exhibits are expected to attain a new plane of technical excellence at this year's session. Those who enjoyed the Hobby Exhibit last year will be glad to know that this feature is being repeated this year. We are also informed, reliably we believe, that the lighter side of the convention's offerings has received appropriate consideration. The annual golf tournament will be played over the Des Moines Golf and Country Club course on the Monday preceding the meeting. The committee on arrangements for the smoker on Tuesday evening have not divulged their plans regarding the entertainment to be provided, but we feel assured it will be such that its purpose of diverting the minds of weary medical men will be accomplished.

Altogether the signs for a successful and profitable 1939 annual session are auspicious. With full realization of the high quality of medical practice in the state of Iowa, the Journal is confident that every physician in the society who finds it at all possible will avail himself of the opportunity to attend the Des Moines session.

Remember the Dates
THE ANNUAL SESSION
April 25, 26 and 27, 1939

A NEW TREATMENT FOR PNEUMOCOCCIC INFECTIONS

The fact that sulfapyridine has become commercially available should occasion some discussion of this new chemotherapeutic agent, presenting the indications for its use, the method of administration, the results of treatment and the toxic effects of the drug.

Sulfapyridine or 2-para-aminobenzene, sulfanilamide-pyridine, is the result of further search for chemical compounds of therapeutic value related to sulfanilamide. It differs from para-aminobenzenesulfonamide or sulfanilamide by the addition of a pyridine radical. A pyridine is a benzene ring in which one of the carbon atoms is replaced by nitrogen.

The particular efficacy of sulfapyridine is in the treatment of pneumococcic infections, although successful results are recorded in meningococcic, streptococcic, gonococcic and staphylococcic infections.

The drug is a bitter powder which is marketed in tablets and capsules of 0.3 of a gram and 0.5 of a gram. It is administered by mouth either in tablet form or in suspension. The recommended dosage for adults consists of five grams the first day, given at four hour intervals in doses of two grams, two grams, and one gram; and one gram every four hours until the temperature, pulse and respiration are normal for forty-eight hours, after which one to three grams are given daily for three to five days. The dosage for children as recommended by Evans and Gaisford consists of:

Under three months, 0.8 gram daily.
Six to twenty-four months, 1.5 grams daily.
Three years, 2.0 grams daily.
Five years, 3.00 grams daily.

In the management of the patient with pneumonia, it is important that typing be done before administering sulfapyridine, for in some manner the drug interferes with typing, and if specific serum should be indicated the correct type cannot be ascertained. The concentration of the drug in the blood can be determined in the same manner as for sulfanilamide, using sulfapyridine as a standard. A blood concentration of about two milligrams per cent is usually sufficient.

The result of sulfapyridine therapy in lobar pneumonia is a marked improvement in the majority of patients within forty-eight hours, regardless of the day of the disease on which treatment is instituted. The temperature usually reaches normal in about thirty-six hours by a rapid lysis, within twenty-four hours there is relief of toxicity and malaise, and during the second day the white blood count falls to normal. Resolution begins with the fall in temperature. The results are so dramatic that the drug seems to have an antipyretic effect. The results in the treatment of bronchopneumonia have not been as striking as in lobar pneumonia, but until a more satisfactory therapeutic agent is available, the use of the drug is justified in this disease.

It must be emphatically pointed out that sulfapyridine must be employed with caution, as is the case with sulfanilamide. A relatively high percentage of patients experience nausea and vomiting during treatment, although it is usually not severe enough to warrant cessation of treatment. Cyanosis, methemoglobin and sulfhemoglobin formation, hemolytic anemia and agranulocytosis have been reported. Headache occurs in about ten per cent and skin reactions are found in six per cent.

The evaluation of sulfapyridine as a therapeutic agent in pneumococcic infections will necessitate prolonged clinical study. Preliminary reports indicate that the cautious use of the drug is an extremely valuable addition to the medical armamentarium. That it will completely replace serum therapy or serve as a panacea has not as yet been demonstrated.

MAY DAY—CHILD HEALTH DAY

In years past May Day was observed in relation to children as a day for celebration. Maypole dances, games, parades and picnics were in order. In short, it was a gala day. Perhaps in the minds of some there lurked a hazy thought that it was a blessing these children were sufficiently healthy to take part in the gaiety, but to the majority of the people it was a carefree day of enjoyment and pageantry.

Early in the second decade of this century a campaign was begun to center public interest on child health in the name of May Day. A congressional resolution was passed on May 18, 1928, authorizing the President of the United States to proclaim May first of each year as Child Health Day. The official slogan which has been adopted for 1939 is "The health of the child is the power of the nation". In many of the states extensive programs are being planned for this day, to bring to the attention of the communities various features of child health. At the New York World's Fair, during the week of May first, a special program has been arranged in honor of the occasion. The Journal surmises there will be few people in America who will object to this national effort to assay and promulgate plans to safeguard and nurture that most valuable of all crops—children, the citizens of tomorrow.

In Iowa no formal statewide celebration of May Day has been planned. Rather is it the feeling of official agencies that every day is child health day. However, it is urged that May Day—Child Health Day, may very well be an occasion for the survey of health accomplishments and of problems to be attacked by united state and community forces. Nor is Iowa without her problems in respect to the health of her children. The recent outbreaks of diphtheria with the needless loss of many lives is an eloquent testimonial to the necessity for an improved program of disease prevention. The high incidence of smallpox which has continued in Iowa for many years is another "blot" which demands concerted action. During the eight year period from 1930 to 1937, Iowa reported 9594 cases as against 2207 in New York and its five adjacent states, whose total population is 13.5 times that of Iowa. In 1938 Iowa reported 1,170 cases of smallpox. Without a law making vaccination against smallpox a requirement for entrance to school, education in the value of and need for this preventive measure must be stressed on both a public and individual basis. The latter can receive its greatest impetus in the office of the practicing physician.

Less spectacular perhaps, but nonetheless important, is the need to inquire into the status of other phases affecting the health of Iowa children. How generally are they receiving periodic health examinations for the detection and correction of remedial defects, particularly those of vision and hearing? Are they being protected as carefully as they should be against the risks of becoming infected with tuberculosis from unnecessary exposure to "open" cases? Can the incidence of motherless homes from maternal mortality be reduced? Can sounder minds and bodies be secured through increased efforts to teach modern principles of nutrition?

These are but some of the thoughts which may well receive consideration on May Day—Child Health Day.

PRESS CONFERENCE ON FARM SECURITY MEDICAL CARE PLAN*

For some time inquiries have come from various newspapers and periodicals in the state regarding the plan suggested for the provision of medical care for the clients of the Farm Security Administration in Iowa. That this information be as accurate as possible, representatives of several papers and news agencies in Iowa were invited to a conference at the central office of the Iowa State Medical Society, with officers of the society and officials of the Farm Security Administration.

After a preliminary statement of the organization and purpose of the Farm Security Administration by Mr. H. W. Anway, state director, and a general explanation of the attitude of the medical profession of Iowa by Dr. Robert L. Parker, secretary of the Iowa State Medical Society, the details of the suggested project were discussed with the reporters. It was especially desired that they realize, and state in their articles, that this plan was on a short trial basis in a few counties, primarily to gain definite information as to the costs of medical care for a reasonably large group of farm people over a year's time. The details of the undertaking, as outlined previously in this Journal, are subject to change, and the whole plan is being conducted on a trial basis, with no obligation on the part of either the medical society or the patient to continue in future years.

It was stated in the Journal of the American Medical Association last year that more open discussion with the press by the organized medical profession in matters both scientific and economic, with opportunity to answer questions raised by the reporters as to our attitude on various policies, would lead to a better understanding, and a more accurate presentation of medical matters in the lay press. In line with this suggestion the press conference was held in March.

The clippings so far received by the committee, give evidence that the conference was well worth while and that the reporters gave a very accurate picture of the plan. It is hoped that the reports will be interpreted properly by those who read them, and that they will understand this is a farm relief type of program, that it does not pretend to cover complete and ideal medical care, nor is the premium charged sufficient to be extended to any other group in return for a satisfactory medical service. The fee which is being adopted in Muscatine county is too low for many counties and should be considered below the minimum to be adopted in most counties. It is about twenty-five per cent above the fee charged in South Dakota for larger sized families, and the rate for families of seven or more is about twice that in South Dakota. With the restrictions provided in the Iowa set-up, we hope to avoid many of the dissatisfactions and abuses which have prevailed in South Dakota.

After this plan has been in operation for a year in three or four counties statistics will be available

*From the Medical Economics Committee.

as to the amount of care required for three or four hundred families, living on the farm, over a year's time. By applying to these services the standard fee bill for the counties where the plan is operating it will be possible to determine with some degree of accuracy the amount of money which would be necessary for a reasonably complete medical service plan on some type of prepayment insurance plan. The National Health Conference report estimated ten dollars per person per year as being the sum necessary to provide a fairly adequate, yet not complete, medical service. We in Iowa are anxious to know if this sum is sufficient to cover a satisfactory service and provide a reasonable remuneration for the profession.

The Medical Economics Committee appreciates the willingness of several counties to experiment with the program this year in order to assist in developing data for use in the future. In medical advancement there must always be experimentation, and in this there is no profit, only a reward for services rendered. In helping to test this plan, these counties are acting as our experimental ground, and although they may not receive adequate pay for all the work done under the plan this year, they will have been of definite assistance in accumulating data on which more satisfactory schemes may be developed. The plan is entirely under the control of the county medical society. The Iowa State Medical Society, the Medical Economics Committee, or the Farm Security Administration have no authority in regard to the provisions or the amount to be charged for the services in the county. If the plan is not workable this year, it can be dropped, or changed next year in any way that seems best to the individual county medical society. By keeping the control within the society, rather than having it in the governmental agency, as it appears to be in some places, we feel it is a legitimate experiment by the medical societies in the field of medical economics, and is not in any way opening the way for a compulsory scheme in the next year. We desire to work continually on various plans as suggested, building new ones where it seems advisable, and adapting the plans of other states to Iowa where that seems wise. There is no desire to rush into a statewide plan, as has been requested by some county societies.

Such experimentation is now in progress in other states, and Iowa should watch these plans closely. The experience of California, New York, Michigan and other states during the next year will be available to us in case we desire to develop some plan of this type in Iowa, and will save us from mistakes which will undoubtedly occur in the development and conduct of these first prepayment medical service plans.

FIFTH ANNUAL TOURNAMENT IOWA STATE MEDICAL GOLF ASSOCIATION

April 24, 1939

The annual Iowa State Medical Golf tournament will be held Monday, April 24, 1939, at the Des Moines Golf and Country Club, Des Moines, Iowa. We are planning on a big turnout this year to compete for the valuable prizes which have been offered. Everyone entering this tournament has a splendid opportunity of carrying home a prize regardless of age, weight, golf ability, or what not. We are earnestly requesting that every doctor in the state who can swing a golf club be on hand for an afternoon of entertainment and a dinner in the evening. This tournament is strictly informal from beginning to end and we will attempt to keep you occupied at all times. The Des Moines Golf and Country Club is a comparatively flat course, but for those few who cannot make the grade, adequate transportation will be furnished except that from the nineteenth hole each doctor will furnish his own means of transportation.

We are hoping to select a team to compete in the American Medical Association tournament at its annual session. This is an added attraction as well as an added incentive. Each doctor will furnish his handicap attested by the local club professional or chairman of his local handicap committee.

There is no better way to begin the week than by a little relaxation on the golf course among friends and old acquaintances; it puts you in shape for the serious part of our program which follows. So pack up your golf clubs, give your patients just another day of rest, and join a gang of swell fellows. Let's make this a banner year. Every county society in the state should furnish one or more golfers, at least.

Drop a line to the secretary notifying him of your intention to compete.

J. C. Donahue, M.D.
Centerville, Iowa
President

John A. Thorson, M.D.
700 Locust
Dubuque, Iowa
Secretary

SPEAKERS BUREAU RADIO SCHEDULE

WOI and WSUI—Tuesdays at 4:00 p. m.

April 11	Mental Hygiene and Sex Information for the Adolescent, (4-H Club Series), Lee R. Woodward, M.D.
April 18	The Hospital and the Community, Paul R. Hanson, Supt. Iowa Lutheran Hospital.
April 25	Venereal Disease Information for the Adolescent, (4-H Club Series), G. V. Caughlan, M.D.
May 2	The Nurse in the Community, Alma Hartz, R.N.
May 9	To be announced.

WOMAN'S AUXILIARY NEWS

Mrs. Fred Moore, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—Mrs. Dean W. Harman, Glenwood
Secretary—Mrs. Jay C. Decker, 722 Thirty-sixth Street, Sioux City
Treasurer—Mrs. William R. Hornaday, 3011 High Street, Des Moines

YOUR TENTH ANNUAL SESSION

Dear Auxiliary Members:

The "Official Call" has gone forth for the Tenth Annual Meeting of the Woman's Auxiliary to the Iowa State Medical Society, on April 25, 26 and 27, with registration and headquarters at the Hotel Fort Des Moines.

The convention will open with a preconvention board luncheon at 12:30 at the Hotel Fort Des Moines, on Tuesday for chairmen of standing committees, officers, and presidents of county units. This will be followed by a trip through the Veterans Hospital, and a group of four teas as a courtesy of the Polk County Auxiliary. A bridge party will be held in the Tropical Room of the Hotel Fort Des Moines at 8:00 p. m. Tuesday.

Wednesday morning will be devoted to the general business of the meeting, including reports of all officers and committees, the award of the membership cup, and an address by Alonzo L. Jenks, M.D., of Des Moines, on "The National Health Program." The 12:15 luncheon at Younkers Tea Room will be addressed by Arthur W. Erskine, M.D., of Cedar Rapids, and Felix A. Hennessy, M.D., of Calmar, president and president-elect respectively of the Iowa State Medical Society. Wednesday afternoon's program will be featured by an address from Mrs. Charles C. Tomlinson of Omaha, president of the Woman's Auxiliary to the American Medical Association. In the evening, we will join our husbands at the annual banquet to be held at 6:30 at the Hotel Fort Des Moines.

Several county presidents have not sent in reports of election of officers for 1939. If you have not done so will you please see that this is taken care of immediately, so that the new state president will have the names of the new officers. County presidents were also mailed questionnaires some time ago, and we are anxious for all of these to be returned at once.

The annual sessions of our organization afford an excellent opportunity to make new acquaintances and renew old friendships. We hope a large percentage of our members can attend. We have had a pleasant, successful year, and I shall look forward to meeting you all at the convention.

Mrs. D. W. Harman, President

THE NATIONAL CONVENTION

The Seventeenth Annual Convention of the Woman's Auxiliary to the American Medical Association will be held May 15 to 19, 1939, in St. Louis. Headquarters for the women will be at the Hotel Chase. Preceding the formal opening of the convention will be a tea honoring the national president, Mrs. Tomlinson, at the home of Mrs. Willard Bartlett, chairman of the general committee on arrangements. General business sessions are scheduled for Monday, Tuesday and Wednesday mornings, with special luncheons, teas, tours of gardens, musicales, and fashion shows, for afternoon and evening entertainment.

St. Louis is so available to us in the middle west that we expect many Iowa physicians and wives to be in attendance at this session. The St. Louis Auxiliary has spared no time or efforts to make this meeting an outstanding one for us, and we know a most enjoyable and profitable week will be the portion of all those who can go. The March 1939 News Letter from national headquarters carried an inspiring article and invitation from Mrs. Bartlett, which exemplifies so well the welcoming spirit of St. Louis, that I am taking the liberty of quoting some excerpts from it.

"I feel I would be remiss did I not say a word about your hostess Auxiliary, since you will see it, of necessity, purely in a social rôle. Many of you remember St. Louis as the birthplace of the infant auxiliary in 1922, and also recall from the records the fact that it was the first large city to have an organized auxiliary—during the 1924 Chicago session of the American Medical Association. * * * The 1939 session should be significant also. We have many challenges to meet on all fronts; first, as the wives of doctors who are facing readjustment; we are also moving into some of the most important days of the world's history, certainly the most important in several centuries, when each one of us will have to know the principles in which we really believe in our social relations, in spiritual and political values, and we will have to stand firmly for them. Our state slogan, 'Organized Intelligence,' is timely. I seem to have one incurable interest—the future; also a firm belief in the ultimate triumph of good and in the eventual wise solution of the problems confronting the medical profession."

COMING MEETINGS

Because we feel that many of the members of the Iowa State Medical Society may be interested in a number of national and special meetings, we are herewith publishing a calendar of the approaching sessions. More detailed information may be secured from the JOURNAL office.

Eighty-eighth Annual Session, Iowa State Medical Society, April 25 to 27, 1939, Des Moines, Iowa. Secretary, Dr. Robert L. Parker, Des Moines, Iowa.

Sixty-third Annual Convention, American Association on Mental Defects, May 3 to 6, 1939, Palmer House, Chicago.

Fourteenth Scientific Session, American Heart Association, Hotel Jefferson, St. Louis, Missouri. Cardiac program, May 12; program of the section for the study of the peripheral circulation, May 13.

American Medical Association, May 15 to 19, 1939, St. Louis, Missouri. Secretary, Dr. Olin West, 535 North Dearborn Street, Chicago, Illinois.

Amercian Board of Ophthalmology. Examinations for 1939 are scheduled as follows: written, August 5; oral, October 6, Chicago. Secretary, Dr. John Green, 6830 Waterman Ave., St. Louis, Missouri.

Annual Meeting of the American Association for the Study of Goiter, May 22, 23 and 24, 1939, Cincinnati, Ohio, with program of scientific papers and dry and operative clinics. Secretary, Dr. W. Blair Mosser, Kane, Pennsylvania.

Twenty-fourth Annual Meeting, American Association of Industrial Physicians and Surgeons, with the American Conference on Occupational Diseases and Industrial Hygiene, June 5, 6, 7 and 8, 1939, Hotel Statler, Cleveland, Ohio. Chairman, Dr. G. F. Sykes, 842 East 79th Street, Cleveland, Ohio.

American Board of Internal Medicine. Written examinations will be held October 16, 1939 (formal application must be received by August 20, 1939); and February 19, 1940 (application must be received before January 1, 1940). Secretary, Dr. William S. Middleton, 1301 University Avenue, Madison, Wisconsin.

First American Congress on Obstetrics and Gynecology, September 11 to 15, 1939, Cleveland, Ohio. Address secretary at 650 Rush St., Chicago, Illinois.

Third Congress of the Pan-Pacific Surgical Association, September 15 to 28, 1939, Honolulu, Hawaii. Sail from Los Angeles, September 7, or San Francisco, September 8. Address Dr. George W. Swift, 902 Boren Avenue, Seattle, Washington; or Dr. Forrest J. Pinkerton, Young Building, Honolulu, Hawaii.

Fifth Annual Meeting of the Mississippi Valley Medical Society, September 27 to 29, 1939, Burlington, Iowa. Secretary, Dr. Harold Swanberg, Quincy, Illinois.

Forty-fourth Annual Convention American Academy of Ophthalmology and Otolaryngology, October 8 to 13, 1939, Palmer House, Chicago. Address Academy at 1500 Medical Arts Building, Omaha, Nebraska.

SPEAKERS BUREAU ACTIVITIES

SPEAKERS BUREAU TO EXHIBIT IN ST. LOUIS

The Speakers Bureau is proud to announce that it will be among the exhibitors at the Ninetieth Annual Session of the American Medical Association to be held in St. Louis, May 15 to 19. "Ten Years of Postgraduate Medical Education in Iowa" has been selected as the title of the display which will be presented, and the progress which Iowa has made since 1929 in the field of postgraduate medical instruction will be the subject upon which the exhibit will be based.

In order to portray an adequate picture of the work which has been accomplished, the exhibit will be comprised primarily of maps which designate the locations of the courses, the programs presented, the lecturers, and the enrollments attained for each year. Also, the various counties from which physicians traveled to attend the courses will be specified.

This exhibit marks the first of its kind for the Speakers Bureau, and we feel highly honored that our endeavors in the line of postgraduate medical education merit their exemplification at a national meeting.

The Speakers Bureau has been assigned Space No. 1005 in the Municipal Auditorium, and all members of the state society who plan to attend the annual session of the American Medical Association are cordially invited to review our exhibit. We believe it will be an excellent illustration of the advance Iowa has made in bringing up-to-date medical knowledge to its physicians.

SPRING POSTGRADUATE COURSES CLOSE

On March 29, the final meeting of the Fourth Councilor District's eight weeks postgraduate course in medicine and surgery was held. Approximately forty-five physicians in northwestern Iowa took advantage of the opportunities which this course afforded by enrolling for the instruction. Many complimentary reports on the lecturers and their presentation of material have been received, and the Speakers Bureau feels that another outstanding series of lectures has met with success.

The six weeks course in general therapeutics, which is being held in Mason City, will be concluded on Tuesday, April 11, at which time Dr. R. Russell Best of Omaha will discuss "Practical Consideration of Some Diseases of Colon and Rectum". The attendance for these meetings has been good, and the physicians have heard extremely practical and worthwhile discussions by excellent lecturers.

In the March issue of the Journal, the Speakers Bureau announced tentative plans for the presentation of a general therapeutics course in Algona this spring. Since that time, further arrangements for such a course have been postponed, and the series of lectures for this center will not begin until next fall.

SOCIETY PROCEEDINGS

Black Hawk County

M. Edward Davis, associate professor of obstetrics and gynecology, The School of Medicine of the Division of the Biological Sciences, University of Chicago, was guest speaker for the Black Hawk County Medical Society, Tuesday, March 14, at the regular meeting held in Waterloo. Dr. Davis spoke on Endocrine Therapy in Obstetrics and Gynecology.

Boone-Story Society

Members of the Boone and Story County Medical Societies met in Ames, Friday, February 24, for their regular meeting, at which time Ruben Nomland, M.D., professor of dermatology and syphilology, State University of Iowa, College of Medicine, Iowa City, presented an illustrated lecture on Diagnosis and Treatment of Common Diseases of the Skin.

Bremer County

The Bremer County Medical Society met in conjunction with the staff of St. Joseph's Mercy Hospital in Waverly, Wednesday, March 22, for a six-thirty dinner, after which Lawrence J. Halpin, M.D., of Cedar Rapids, read a paper on Allergy in General Practice.

O. C. Hardwig, M.D., Secretary
Mercy Hospital Staff

Buchanan County

The first quarterly meeting of the Buchanan County Medical Society was held at the State Hospital in Independence, Thursday, March 16. Dr. R. A. Stewart, superintendent of the hospital, and his staff were in charge of the meeting. After a fine dinner, Arthur W. Erskine, M.D., of Cedar Rapids, president of the Iowa State Medical Society, addressed the society on The Newer Trends in Organized Medicine. The lively and serious discussion of the paper indicated the marked success of the meeting. The next meeting of the society will be the annual golf and scientific meeting to be held in June. Plans will be announced later.

N. L. Hersey, M.D., Secretary

Calhoun County

Two Des Moines physicians furnished the scientific program for the Calhoun County Medical Society at a meeting held in Rockwell City, Tuesday, February 21. John C. Parsons, M.D., spoke on The Diagnosis of Tuberculosis, and Robert F. Hansen, M.D., of the State Department of Health, presented an illustrated lecture on syphilis.

Davis County

Robert F. Hansen, M.D., of the State Department of Health, Des Moines, also appeared before the Davis County Medical Society, with the motion picture film on syphilis. The meeting was held in Bloomfield, Friday, February 24.

Des Moines County

The regular monthly meeting of the Des Moines County Medical Society was held Tuesday, March 14, at the Hotel Burlington in Burlington. Members were addressed by Olan R. Hyndman, M.D., assistant professor of surgery, State University of Iowa, College of Medicine, Iowa City, on The Relief of Intractible Pain.

E. R. Russell, M.D., Secretary

Greene County

Walter A. Anneberg, M.D., of Carroll, presented a paper before the Greene County Medical Society at a meeting held in Jefferson, Thursday, March 16, on Extrapulmonary Pneumococcal Infections Treated with Sulfapyridine, Specific Serum and Blood Transfusion.

Grundy County

Officers elected at the annual meeting of the Grundy County Medical Society held in Dike, Friday, February 17, include: Dr. W. O. McDowell of Grundy Center, president; Dr. E. A. Nash of Dike, vice president; Dr. J. E. Rose of Grundy Center, secretary and treasurer; Dr. R. T. Spain of Conrad, delegate, and Dr. C. H. Bartruff of Reinbeck, alternate delegate.

Hardin County

The Hardin County Medical Society met in regular session Thursday, March 9, at the Hotel Winchester in Eldora. After a six-thirty dinner, Eugene J. Knopf, M.D., of Hubbard, gave an illustrated lecture on Medical Practice in the Heart of the Cumberland.

W. E. Marsh, M.D., Secretary

Harrison County

On Thursday, March 9, members of the Harrison County Medical Society met at the Court House in Logan, where Robert F. Hansen, M.D., of the State Department of Health, Des Moines, gave an illustrated lecture on syphilis.

Henry County

Verl A. Ruth, M.D., of Des Moines, was guest speaker for the Henry County Medical Society at a meeting held in Mt. Pleasant, Tuesday, March 21. Dr. Ruth read a paper on Back Injuries.

Jasper County

The Jasper County Medical Society met in regular session, Tuesday, March 7, and heard Clifford W. Losh, M.D., of Des Moines, discuss the general subject of urology.

Johnson County

The scientific program for the Johnson County Medical Society meeting held at the Hotel Jefferson in Iowa City, Wednesday, March 1, was furnished by a guest speaker from The Mayo Clinic of Rochester, Minnesota, Edward H. Rynearson, M.D., who spoke on Recent Advances in Endocrinology.

Robert J. Prentiss, M.D., Secretary

Linn County

The next meeting of the Linn County Medical Society will be held Monday, April 24, in Cedar Rapids, when the society will entertain Soma Weiss, M.D., of Boston, Massachusetts, as guest. Dr. Weiss is professor of medicine and chief of staff of the Peter Bent Brigham Hospital, and will speak on Cardiac Asthma and Related Syndromes. Visiting physicians are cordially invited.

T. F. Hersch, M.D.,
Chairman, Program Committee

Mills County

The Mills County Medical Society was entertained by Drs. I. U. Parsons and T. E. Shonka at the Shonka home in Malvern, Thursday, February 16. Dr. Parsons opened the discussion on pneumonia with a summary of interesting cases seen in his own practice, and John H. Kuitert, M.D., of Glenwood, read a paper on the various types of pneumonia.

Woodbury County

The March meeting of the Woodbury County Medical Society was held Tuesday, March 14, at the Martin Hotel Ballroom in Sioux City. Arch F. O'Donoghue, M.D., of Sioux City, presented a lecture on Injuries to the Spine and Pelvis.

W. H. Gibbon, M.D., Secretary

Iowa Pediatric Society

Members of the Iowa Pediatric Society were guests of the Pediatric Department of the University of Iowa, College of Medicine, Friday, March 3. Informal ward rounds were conducted in the morning. At a noon luncheon at the Jefferson Hotel, opportunity was afforded for pleasant social contact, discussion of common problems and for the short business meeting. In the afternoon several papers were presented by members from the state at large and by departmental staff members. Dr. Julian D. Boyd was in charge of the arrangements for the meeting.

Tri-County Medical Society

The Tri-County Medical Society, composed of physicians from Henry, Jefferson and Washington counties, met at the Harlan Hotel in Mt. Pleasant, Friday, February 24, for the following program: Symptoms and Signs of Heart Disease, Elmer E. Kottke, M.D., of Des Moines; and Socialized Medicine, Harry M. Ivins, M.D., of Cedar Rapids.

PERSONAL MENTION

Dr. John W. Jansonius, resident physician at Broadlawns General Hospital in Des Moines, will locate in Iowa Falls, May 1, where he will take over the practice of the late Dr. L. E. Fraser. Dr. Jansonius was graduated in 1937 from Washington University School of Medicine, St. Louis, and completed his interneship last year at Iowa Methodist Hospital in Des Moines.

Dr. Fredric L. Wilson of Sioux City, was guest speaker for the Town Hall Forum at Whiting, Thursday, March 9, taking for his subject, "Socialized Medicine and Its Effect on the Medical Profession".

Dr. E. D. Plass, head of the department of obstetrics and gynecology, State University of Iowa, College of Medicine, Iowa City, spoke before the George Washington University Medical Society in Washington, D. C., Saturday, March 18, on "Safer Obstetrics".

Dr. Helge Borre, who has practiced in Audubon for the past three years, has moved to Emerson, where he will continue in the practice of general medicine.

Dr. H. A. Spilman of Ottumwa, addressed the Rotary Club in Bloomfield, Monday, February 27, at a meeting held in the Lincoln Hotel. Dr. Spilman spoke on "National Defense".

Dr. Hale F. Shirley, assistant professor of psychiatry, State University of Iowa, College of Medicine, Iowa City, was guest speaker for the Davenport Council of Social Work, at a meeting held in Davenport, Thursday, March 2. His subject was "The Causes and Treatment of Juvenile Delinquency".

Dr. Edmund S. Donohue, formerly of Gregory, South Dakota, has arrived in Sioux City, where he will be associated with Dr. Arch F. O'Donoghue. Dr. Donohue was graduated in 1933 from Creighton University School of Medicine, Omaha.

Dr. G. A. Sywassink of Muscatine, spoke at a meeting in Letts, Thursday, March 9, on "Cancer Control". The meeting was sponsored by the Junior Federated Club and the Letts Study Club.

Dr. William F. Mengert, professor of obstetrics and gynecology, State University of Iowa, College of Medicine, Iowa City, has just returned to Iowa City from a speaking tour throughout Kansas, after completing a series of lectures on his specialty, under the auspices of the Kansas State Board of Health. Dr. Mengert spoke in Beloit, Smith Center, Hays, Abilene and Ellsworth.

MARRIAGES

Miss Mary Martha Gordon, formerly of Houston, Texas, and Dr. Walter Thompson of Iowa City, were united in marriage, Saturday, March 11, at the Methodist parsonage in Iowa City. The couple will live in Iowa City, where the bride has completed advanced work in sociology at the University of Iowa, and where Dr. Thompson is associated with the department of neurology, of the State University of Iowa, College of Medicine.

DEATH NOTICES

Agan, George M., of Glenwood, aged seventy-nine, died March 14, at the home of his daughter in Owatonna, Minnesota. He was graduated in 1886 from the Hospital College of Medicine, Louisville, and at the time of his death was a life member of the Mills County and Iowa State Medical Societies.

Bliss, Edwin C., of Grinnell, aged eighty, died February 26, at the home of his daughter in Oberlin, Ohio, after an extended illness. He was graduated in 1885 from Rush Medical College, University of Chicago, and at the time of his death was a member of the Poweshiek County Medical Society.

Glynn, Charles Edward, of Davenport, aged sixty-six, died March 5, at Mercy Hospital, following a heart attack. He was graduated in 1902 from University of Illinois, College of Medicine, Chicago, and at the time of his death was a member of the Scott County Medical Society.

Hartley, George Alexander, of Battle Creek, aged fifty-six, died suddenly March 17, after a heart attack. He was graduated in 1908 from the State University of Iowa, College of Medicine, Iowa City, and had long been a member of the Ida County Medical Society.

Miller, Bird Hagans, of Blockton, aged seventy-one, died February 24 in Des Moines where he had been taken for treatment. He was graduated in 1893 from Marion-Sims College of Medicine, St. Louis, and at the time of his death was a life member of the Taylor County and Iowa State Medical Societies.

Skinner, Frank Stephen, of Marion, aged sixty-six, died March 6, after a brief illness of influenza. He was graduated in 1897 from Rush Medical College, University of Chicago, and at the time of his death was a member of the Linn County Medical Society.

HEALTH CALENDAR FOR NEW YORK WORLD'S FAIR

An elaborate calendar of special events and days will be celebrated at the New York World's Fair during the six months' period this summer. Leading organizations have scheduled a large number of days for the observance of health and medicine in the "World of Tomorrow." These include:

May 1—National Child Health Week (to May 8).
May 9—Dental Society of New York State Day.
May 12—National Hospital Day—Nurses' Day.
May 16—American Medical Association Day.
May 17—Red Cross Day.
May 19—Tenth International Congress of Military Medicine and Pharmacy Day.
May 31—State Medical Association Day.
June 3—American Academy of Pediatrics Day.
June 4—American Society for the Hard of Hearing Day.
June 18—New York City Health Department Day.
June 23—School Health Day.
June 27—County Medical Association Day.
October 21—National Health Day.

THE CHINESE MEDICAL PROFESSION SEEKS AID

The Journal is in receipt of a letter from the National Library of Peiping, now established at Kunming, Yunnan, containing a plea for reprints, books and old volumes of medical publication, to replace the scientific literature which has been destroyed during the hostilities of the past months. We quote from the letter:

"In order to keep Chinese scholars informed as to the recent development of various branches of science, we are building up a special reprint collection which will be of great value to investigators engaged in scientific research. As we have to start our work entirely afresh, we are in urgent need of books and periodicals of all kinds, old or new, especially standard works in various fields. Donations of books from American and Canadian authors may be sent to us in care of the International Exchange Service, Smithsonian Institution, Washington, D. C., which makes monthly shipments to China."

We feel that this is a cause worthy of your consideration, and that any contributions Iowa physicians may be able to make will render a great service to the present medical profession in China, as well as future generations of intellectual workers in that country.

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

DR. FRANK M. FULLER, Keokuk
DR. JOHN T. McCLINTOCK, Iowa City
DR. R. T. LENAGHAN, Clinton
DR. TOM B. THROCKMORTON, Des Moines
DR. WALTER L. BIERRING, Des Moines
DR. WILLIAM JEPSON, Sioux City

Notes From the Iowa Medical and Chirurgical Journal, 1851

FRANK M. FULLER, M.D., Keokuk

Because of the recent emphasis on focal infections of the teeth, many physicians and the majority of the laity feel that this idea must be a development of recent study. It may be interesting to read the following article entitled "Remarks on the Prevention and Care of Caries of the Human Teeth," by Dr. Joseph Sanford, Chillicothe, Ohio, as published in the February 1, 1851, issue of the *Iowa Medical and Chirurgical Journal,* in Keokuk.

"Diseases of the teeth, although not usually considered within the legitimate range of general surgery, are by no means unimportant. The numerous diseases of important structures which result from various morbid conditions which are incident to the teeth, invest the subject of dental pathology with an interest which should be felt by every practitioner of the healing art.

"The discussion of the various and important topics connected with the pathology of these important organs would render necessary an anatomical and physiological description incompatible with our present purpose; we propose to devote a few thoughts to one of the most common forms of disease to which they are subject, and to briefly illustrate its influence upon the important parts, as well as upon the general frame.

"It needs no argument to show the intimate connection which affections of the teeth have, not only with the convenience, comfort and good looks of an individual, but with his health and very existence.

"Numerous diseases of a painful and intractable character, often periling by their intensity or persistence, proceed entirely from the contents of the alveoli. Amongst these we may mention violent and continued headaches, glandular swellings about the mouth and neck, terminating in or combined with abscess, ulceration of the tongue or lips, sometimes assuming a malignant character from long continued irritation; tic douloureux and neuralgic affections of the tongue and jaws; abscess and sinus of the cheek; enlargement and change of the structure in the gum, often leading to malignant tumor of the bone. From affections of the nerves, thus induced, or from the necessarily imperfect mastication, serious derangements of the digestive organs may ensue, and from continued constitutional irritation, grave constitutional disease may result.

"This enumeration of evils, by no means exaggerated, will illustrate the connection of dental disease with general surgery, and render appropriate for publication in your JOURNAL a few reflections upon the pathology and treatment of caries.

(Here follows a very scholarly and complete discussion of the difference in pathology and repair processes in bone and teeth, showing clearly how the two differ in natural repair and in scientific dental repair. F.M.F.)

"The causes of caries of the teeth are numerous, and may be divided into two classes, external and internal. External causes embrace a great number of alimentary substances and the inhalation through the mouth of noxious or acrid vapors or gases. The internal include exhalation from the stomach, perhaps occasionally from the lungs, and the various secretions occurring in the mouth. Of the first class, it has been thought that those articles of a decidedly acid character are most productive of dental caries. Many substances, which by transient or temporary contact would be unattended with harm, acquire a deleterious quality by decomposition and changes, after remaining for days or weeks in contact with the teeth.

"Vitiated exhalations from the stomach are undoubtedly a prolific source of dental caries; in cases of indigestion and other gastric disorders, the teeth seldom maintain the integrity of the organism, and this fact, abundantly confirmed by observations, exemplifies the importance of prophylactic means, on the part of such invalids.

"A third class of causes might be connected with a general cachectic or depraved state of the system.

"Embraced in the chain of vital sympathies which so beautifully and harmoniously regulate the functions of the animal economy, the teeth are not supposed to be exempt from or independent of morbid influences pervading the general frame. They derive their nourishment from the great pabulum of life, and when this is changed or vitiated in its character so as to be unfitted for the purposes of health nutrition, they feel the influence and often perish from the deprivation.

"The treatment of caries of the teeth is prophylactic and curative. Mere palliative treatment, as recommended by some, is not to be thought of.

"The old adage that an ounce of prevention is better than a pound of cure, is nowhere more obviously true than in caries of the teeth. This will appear when we reflect that breaches of continuity in the dental structures are never repaired by nature, but require artificial substitutes for the original structure, which are, at best, inadequate compensation for the loss. By careful and due attention to cleanliness this indication is satisfactorily fulfilled.

"It is evident that all the causes embraced in the first class may be removed as far as their immediate action on the teeth is concerned. The treatment of derangements of the digestive organs, injuriously affecting the teeth, belongs to the physician, but even this cause of dental caries may be held in abeyance for an indefinite length of time by a vigorous use of the brush. This little instrument, so important in the armamentarium of the dentist, requires some care in its selection and use. In cleansing the teeth, it is not sufficient to remove the superficial accumulation. The brush should be stiff and made by the application of sufficient force to penetrate the interspaces between the teeth, and to remove from about the neck, where it usually collects, every particle of foreign matter. Where stains appear upon the teeth they should be speedily removed by the employment once a day, of Creta Preparata, or Pulv. Orris Root, either of which will restore the teeth to their natural color in a few days; if the teeth are thus treated, caries will seldom attack them.

(Remember the last paragraph was written in 1851, and is not a recent radio advertisement. F.M.F.)

"Sometimes the teeth are so crowded as to render a thorough cleansing impossible. This should not deter anyone, however, from using the proper means, for if disease in them be not wholly prevented, it will, at least, contribute very greatly to their preservation.

"My practice has universally been, where the teeth are crowded, to extract the right and left superior bicuspids, which makes ample room for the remaining teeth to take their places as nature designed; the same operation is applicable to the teeth of the inferior maxilla, and should be performed between the ages of eleven and sixteen, as at a later period they will not do so well.

"If patients object, as they sometimes do, to the extraction of teeth under these circumstances, it will be well to explain to them the nature of other serious diseases which often result from a crowded state of these organs. Behind, the irritation from this cause, may induce swelling, vascularity, ulceration of the mucous membranes with attacks of troublesome or even dangerous cynanche. In front, crowded incisors induce abscess, not only of the soft parts, but frequently of the bone.

"The second indication is to cure, and this is abundantly simple. When caries has made its appearance in a tooth there is nothing that will arrest its course but the complete excision and removal of every atom of morbid matter. The operative procedure required in these cases is familiar to every practical dentist, and need not be detailed. Two errors are to be avoided; much violence, which may entail unnecessary loss of substance; and second, a neglect to penetrate every part of the cavity and remove every part of diseased bone. When this has been satisfactorily done, the cavity is to be wiped perfectly clean and dry, and accurately filled with pluggings of pure metallic gold foil. This restores function and prevents influences which produce and perpetuate the disease."

ATTENDING FAMILIES BY THE YEAR

March, 1851

"We are happy to see this contemptible custom so universally reprobated by the medical press. We commend the following extract from the St. Louis *Post,* to the attention of medical gentlemen who hold a lien upon the confidence of their patients by virtue of a twenty-dollar contract:

" 'The plan of attending families by the year is dictated by a trading mercenary spirit, unworthy of members of a dignified profession. It has too much of the air of pelf about it, and should at

once be abandoned. It may suit the dealer in matches, the butcher or the iceman, but is clearly out of place among physicians. We are glad to hear that, not withstanding the efforts of some members to have it recognized by the Medical Society, that respectable body unhesitatingly condemned it.' "

EDITORIAL—April 1, 1851

"The Iowa State Medical and Chirurgical Society will meet in Fairfield, Jefferson County, on the first Wednesday in May, 1851. Every physician in the state who can possibly disengage himself from professional duty should attend this meeting.

"It is expected that the Society will be permanently organized, and adopt some efficient plan for carrying forward its scientific operations; and every physician who feels an interest in the welfare and prosperity of the profession in Iowa should attend the state meeting and unite with his brethren in the necessary labors.

"No state in the union is less cursed with empiricism (except in patent medicine) than this. Thompsonianism, homeopathy, hydrotherapy, Eclecticism and other forms of quackery have not as yet taken root in our soil. If the medical profession will unite in such associations as will promote the development and dissemination of the true principles of our science, its future growth will be effectually arrested.

"Nothing has been done in the last ten years to give the profession of medicine its present high position in the United States, as the concentration of effort brought about by medical associations.

"Everywhere has empiricism yielded to its power, because it not only serves to unite the divisions in our ranks, to heal the feuds incident to medical men, but it brings the profession and its achievements prominently before the intelligent world, and places the truths of science in glaring contrast with the legerdemain and abominable tricks of arrogant pretenders.

"We would most respectfully urge our medical friends, throughout the state, to attend the meetings of the State Society at every reasonable sacrifice, and we are sure they will have no reason to regret it."

(The same advice applies in 1939! F.M.F.)

THE MEDICAL SOCIETY OF THE CITY OF KEOKUK

April, 1851

"This Society held its last regular meeting on the third, inst., at which there was a full attendance of its members; the president, Dr. Millard, in the chair. In addition to the ordinary business of the Society, four delegates, consisting of Drs. Hemenway, Haines, Armor and Collins, were appointed to attend the next session of the Iowa State Medical and Chirurgical Society. They were instructed and empowered to take the necessary steps to render this Society auxiliary to the State Society, and to accept such conditions and regulations as the State Society may adopt in reference to auxiliary societies.

"Dr. Armor, in accordance with the by-laws of the Society, was appointed to read a paper on some medical or surgical subject at the next regular meeting. Dr. Ford was requested to report at the same time a case or cases that shall have come under his observation. The society then went into the consideration of the subject of Practical Medicine, upon the report of a case by Dr. Haines. After a spirited discussion, the subject was postponed for further consideration, to a special meeting on the tenth, inst."

April 10, 1851

"The special meeting was held, according to adjournment, vice president, Dr. S. Haines, in the chair. The object of the meeting being the consideration of the cases before reported, the time was occupied in discussions of questions relating to those subjects.

"On motion a subject for discussion was chosen for the next special meeting as follows: 'The Therapeutical Uses of Blood-Letting.' Adjourned to meeting on the 24th inst., at the office of Dr. Ford. The next regular meeting will be held on the first Thursday of July next, at 7 o'clock p. m.

E. R. Ford, Secretary; J. Millard, President."

ART EXHIBIT AT ST. LOUIS

The American Physicians' Art Association will conduct its Second Art Exhibit at the City Art Museum of St. Louis next May during the annual session of the American Medical Association. This organization is composed of over seven hundred physicians throughout the nation who have become proficient in all types of art work as an avocation, and the following information is given for the benefit of any members of the Iowa State Medical Society who may be interested.

Art pieces will be accepted for this art show in the following classification: oil, both portrait and landscape; water colors; sculpture; photographic art; etchings; ceramics; pastels; charcoal drawings; bookbinding; wood carving, and metal work (jewelry). More than sixty prizes will be awarded. For details of membership in the association and rules of the exhibit, one should communicate with Dr. Max Thorek, secretary, 850 Irving Park Boulevard, Chicago; or Dr. F. H. Redewill, president, 521 Flood Building, San Francisco.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

CLINICAL LABORATORY METHODS AND DIAGNOSIS—By R. B. H. Gradwohl, M.D., St. Louis. Second edition. The C. V. Mosby Company, St. Louis, 1938. Price, $12.50.

INFECTIONS OF THE HAND—By Allen B. Kanavel, M.D., late professor of surgery, Northwestern University Medical School. Seventh edition, thoroughly revised. Lea and Febiger, Philadelphia, 1939. Price, $6.00.

A MANUAL OF FRACTURES AND DISLOCATIONS—By Barbara Bartlett Stimson, M.D., associate in surgery, College of Physicians and Surgeons, Columbia University. Illustrated. Lea and Febiger, Philadelphia, 1939. Price, $2.75.

MEDICINE IN THE OUTPATIENT DEPARTMENT—By Winthrop Wetherbee, Jr., M.D., junior visiting physician, Boston City Hospital. Paul B. Hoeber, Inc., New York, 1938. Price, $1.00.

OUR COMMON AILMENT—By Harold Aaron, M.D., medical consultant to Consumers Union of United States. Dodge Publishing Company, 116 East 16th Street, New York, 1938. Price, $1.50.

PHYSICAL DIAGNOSIS—By Richard C. Cabot, M.D., professor of clinical medicine emeritus, Harvard University; and F. Dennette Adams, M.D., Harvard Medical School. Twelfth edition. William Wood and Company, Baltimore, 1938. Price, $5.00.

SCARLET FEVER—By George F. Dick, M.D., professor of medicine, University of Chicago; and Gladys Henry Dick, M.D. The Year Book Publishers, Chicago, 1938.

SUPERFLUOUS HAIR AND ITS REMOVAL—By A. F. Niemoeller, A.B., M.A., B.S., with a foreword by M. H. Marton, M.D. Harvest House, New York, 1938. Price, $2.00.

SURGERY OF ORAL AND FACIAL DISEASES AND MALFORMATIONS—By George van Ingen Brown, M.D., emeritus professor of plastic surgery, University of Wisconsin. Fourth edition. Lea and Febiger, Philadelphia, 1938. Price, $10.00.

SURGICAL PATHOLOGY OF THE DISEASES OF THE MOUTH AND JAWS—By Arthur E. Hertzler, M.D., professor of surgery, University of Kansas. J. B. Lippincott Company, Philadelphia and London, 1938. Price, $5.00.

TRAUMA AND INTERNAL DISEASE—By Frank W. Spicer, M.D. Illustrated. J. B. Lippincott Company, Philadelphia and London, 1939. Price, $7.00.

THE TREATMENT OF FRACTURES—By Charles Locke Scudder, M.D., formerly assistant professor of surgery, Harvard Medical School. Eleventh edition, revised. W. B. Saunders Company, Philadelphia and London, 1938. Price, $12.00.

BOOK REVIEWS

THE PRINCIPLES AND PRACTICE OF OBSTETRICS

By Joseph B. DeLee, M.D., professor of obstetrics and gynecology, emeritus, University of Chicago. Seventh edition, entirely reset. W. B. Saunders Company, Philadelphia and London, 1938. Price, $12.00.

Since the original edition twenty-five years ago, this book has been a "standard of comparison". This, the seventh edition, surpasses the excellence for which the previous ones have been so widely known. The entire text has been carefully revised and brought up to date.

Those chapters dealing with the physiology of menstruation, nidation of the ovum, and the blood chemistry of the toxemias, have been rewritten in accordance with the latest proved concepts. Much has been added to the chapter on mechanism of labor. The sections on pathology of labor and operative obstetrics bring directly to us the experience and principles of practice of a great obstetrician and teacher. The treatment of puerperal sepsis with sulfanilamide has been included. From the vast present day literature on the endocrine glands and vitamins, the author has selected only that which is most important and useful. The subject of pregnancy associated with systemic diseases has been revised to keep pace with the rapid strides which have been made in internal medicine and surgery.

This volume can be recommended to anyone dealing with obstetrics, because it is suitably organized and sufficiently brief for use by the medical student; it presents the practical application of the best obstetric thought and methods, making it a boon to the general practitioner; and it contains such a wealth of material that it is an extremely useful reference book for the specialist. R. W. S.

PHYSICAL DIAGNOSIS

By Richard C. Cabot, M.D., professor of clinical medicine emeritus, Harvard University; and F. Dennette Adams, M.D., Harvard Medical School. Twelfth edition. William Wood and Company, Baltimore, 1938. Price, $5.00.

Nothing is so important to the practitioner as an accurate diagnosis, and the text under discussion is clearly designed to discuss the principles and intricacies of diagnosis, and the possible errors of such, which thwart our honest desires to be correct. This volume is an exhaustive treatise of the problems of diagnosis, and their clinical applications. The subject matter is restricted to the practical, and the material is exceptionally well organized. This new twelfth edition incorporates all the modern ideas of diagnosis, and it covers the field with completeness and discrimination.

The first three chapters are devoted to the history, the physical examination, and a chapter called "The Body as a Whole", which deals with posture, stature, gait, position, abnormal movements, skin, temperature, weight, fever, and chills. The text deals systematically with all the various organs, devoting separate chapters to considerations of "what to look for". Ten consecutive chapters cover the diagnostic

aids which will be encountered in heart disease, and devote individual chapters to electrocardiography, rheumatic heart disease, syphilitic heart disease, hypertensive heart disease, angina, bacterial endocarditis, the arrhythmias, and pericarditis. The last chapter includes all the complicated physical findings associated with diseases of the nervous system.

Those of us who wish to evade sluggish clinical judgment and observation, would do well to acquire, study, read, and know this text. J. W. C.

THE SCIENTIST IN ACTION

By William H. George, M.Sc., Ph.D., honorary lecturer in physics, University of Sheffield. Emerson Books, Inc., 251 West 19th Street, New York, 1938. Price, $3.00.

It has not been this reviewer's privilege to see a volume which aproaches the problem of scientific research from the viewpoint expressed by this author. Not so much concerned with method as with attitude, he deals with the approach to scientific research, first from the point of the scientific outlook and with complete detachment from the goal anticipated. He indicates that the scientist must become a part of his investigation in the analysis of his reaction to the problem at hand and the facts observed. This attitude assures a more wholesome appreciation of the material observed and permits few faults in the reasoning toward a result. In later chapters, the author discusses the general method for the collection of scientific facts and the arrangement of these facts for proper conclusions.

While the work has obviously been written for the research scientist, this reviewer believes that anyone engaged in a scientific pursuit will not only benefit by a careful reading of the volume but will be highly entertained as well. R. R. S.

THE NEW INTERNATIONAL CLINICS

Volume IV, New Series One. Edited by George Morris Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. J. B. Lippincott Company, Philadelphia, 1938.

This volume of the International Clinics is composed of fifteen original contributions, presenting a wide variety of subjects of general interest to the clinician; clinics on the subjects of congenital arteriovenous fistula, acute aleukemic lymphadenosis, and differentiation between pulmonary and cardiac insufficiency in chronic pulmonary disease; and a review by Haymaker and Anderson of The Adrenogenital and Cushing's syndrome.

Because the scope of the content of this volume is so broad, it is impossible adequately to review it. The excellence of the presentations, the authenticity of the articles, and the wide variety of subjects make the clinics a valuable source of information for the student of medicine. D. K.

PRACTICAL MICROBIOLOGY AND PUBLIC HEALTH

By William Barnard Sharp, M.D., professor of bacteriology and preventive medicine, Medical Department of the University of Texas. Illustrated. The C. V. Mosby Company, St. Louis, 1938. Price, $4.50.

This handbook is designed to aid medical students attending those schools where bacteriology and public health are given as a combined course. The handbook, however, is to be supplemented with standard textbooks and lecture notes. This book is more of a laboratory manual than a textbook, and as a reference volume is of little or no use. The value of this handbook is limited entirely to medical students who can use it as a laboratory and field guide in bacteriology and public health. T. E. E.

A TEXTBOOK OF HISTOLOGY

By Alexander A. Maximow, late professor of anatomy, University of Chicago; and William Bloom, associate professor of anatomy, University of Chicago. Third edition, completely revised. W. B. Saunders Company, Philadelphia and London, 1938. Price, $7.00.

This is one of the classic texts on histology written for the student and the anatomist. The most unusual feature of the text is the capacity of the authors to integrate structure and function which, in contrast to the usual text, makes the contents extremely interesting reading. Especially valuable for the clinician are the chapters on the blood and the endocrine glands; they give him a sound basis for clinical understanding. The volume is replete with illustrations, some in colors, which add greatly to the value of the work. D. K.

THE 1938 YEAR BOOK OF GENERAL MEDICINE

Edited by George F. Dick, M.D., J. Burns Amberson, Jr., M.D., George R. Minot, M.D., W. B. Castle, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Chicago, 1938. Price, $3.00.

This is the annual classic review of the literature of general medicine for 1938. The material is classified and presented under the subjects of infectious diseases, diseases of the chest, diseases of the blood and blood-forming organs, diseases of the kidney, diseases of the heart and blood vessels, and diseases of the digestive system and of metabolism. Each classification is presented by an authority in that particular field, and each contribution is briefly evaluated by the reviewer.

The tremendous number of medical journals and the impossibility of reading all the current literature make the annual Year Book a valuable source of information for the busy physician. The authoritative evaluation of the numerous contributions adds greatly to the value of the volume. D. K.

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ANAL PRURITUS*

LOUIS A. BUIE, M.D., Section on Proctology
The Mayo Clinic, Rochester, Minnesota

The predominant symptom of anal pruritus is itching of the skin of the anus and of its external margins. There is wide variation in the degree of itching. The simple, transitory discomfort which is usually due to unhygienic habits must not be confused with the torture of the actual disease. During the early stages of the disease the symptom may appear only periodically and may endure only for several weeks or even for a few months; soon, however, the condition proves its identity by its characteristic intractability.

The aggravating and demoralizing effects of anal pruritus are well known. Its victim usually recalls that early he was able to gain comfort by the use of lotions, ointments, or simple cleansing methods, but that finally he found such measures valueless. Hopefully he then tried remedies suggested by friends and medicaments obtained from drug stores where some assistant knew of a "cure." Such a panacea might have given relief, or it might not have helped in any way. Usually, the patient then found access to such means of therapy as injections, violet rays, quartz lamps, roentgen rays, radium, pile operations, nerve sections, and so forth. Then to his final hopelessness was added that of whomever was treating him and he soon found himself suffering not only from pruritus, but from other discomforts which had developed during the therapeutic parade. Sleeplessness, financial worry and physical illness have reduced him to the familiar "nervous wreck." He has considered suicide but instead has decided to make a final attempt to get well. He is nervous and jumpy and rocks himself to and fro on a stationary chair as he is questioned. He is exhausted from loss of sleep and his finances have been entirely depleted. Once he cut his finger nails close to keep from "tearing himself to pieces" scratching; later, even the pain produced by scratching was preferable to the everlasting itching. Thus he appears, totally incapacitated, terribly disturbed, possessing nothing but a groundless hope of relief by some manner of magic. This individual has real anal pruritus and he quietly acquiesces when told that six or eight weeks may be required for relief and that a generous portion of that time may have to be spent in the hospital. When he is told that even then some failures occur, he does not object and is willing to stay indefinitely if there is even a chance of cure.

In the experience of most investigators, there is a marked predominance of males among patients who have the disease. Only 0.5 per cent of our patients at the clinic were less than twenty years of age; 96 per cent were more than thirty years of age. Patients who were between the ages of thirty and sixty years represented 81.6 per cent of the total, and only four patients were less than ten years of age. Forty-six per cent of our patients placed the anal itching secondary to other, more serious, disorders; the major complaint of 54 per cent was wholly, or mostly, of anal pruritus.

There does not seem to be any logical reason for considering anal pruritus a disease of unknown etiology. Much of the confusion which has existed concerning its cause has undoubtedly been due to the fact that effort has been made to identify a specific causative organism. It is not only a tenable idea, but probably a fact, that a definite reason can be discovered for any given case of anal pruritus if sufficient time and effort are given to the investigation; but the patience of the diagnostician, as well as that of the sufferer, may become exhausted before a solution has been found, and this accounts for so many patients going on and on without relief. Hypertrophied anal papillae, phlebitis, varicose veins and hemorrhoids, instead of causing anal pruritus, probably merely accompany it. I have supported the hypothesis that there are two types of anal pruritus, the direct type and the indirect type, and further experience does not lead me to abandon this position. However,

*Read before the Upper Des Moines Medical Society, Lake Okoboji, Iowa, August 4, 1938.

certain developments have shed additional light on the problem and, in the face of them, it seems proper to broaden these classifications.

More than a half century ago, Allingham advanced the hypothesis that anal pruritus was not due to local pathologic changes only, but that probably other causative influences existed in the form of visceral disease. He dwelt at length on this topic in a small monograph which was published in 1882, but few were attracted by the plausibility of the idea and his opinions had little influence. In fact, practically no reference was made to it until more than four decades later, when Montague published his work, "Pruritus of the Perineum." This author dealt also with the visceral source of the disease and provided a descriptive outline of the mechanism by which the disturbed sensory impulses reached the zone of discomfort. There is strong evidence to substantiate the claims of these authors and, doubtless, hepatic disease, renal disorders, cholecystitis, appendicitis, and so forth, play a part in the etiology of anal pruritus. The hypothesis is, however, too nebulous ever to be widely applied to the therapeutic management of the disease and it is likely to continue to be only of academic interest. Possibly a physician, having exhausted every other therapeutic possibility, may advise a patient who has anal pruritus to undergo cholecystectomy when it is evident that cholecystitis exists, but it is extremely unlikely that such a procedure will be advised under any other circumstances. However, hepatic and nephritic disease should be combated in any case of anal pruritus in which they are found, but whether with the object of removing neurogenic or infectious influences is another matter.

It is not this type of derangement which exemplifies the indirect (neurogenic) type of pruritus. I believe the significant facts concerning that type were brought forth originally by Montgomery in his admirable work on the histopathology of the disease. He noted marked similarity between the changes in the skin and subcutaneous stroma in cases of anal pruritus and those in cases of neurodermite and urticaria, a fact, however, which does not explain the origin of the disease. When one is confronted with such intangible disorders as urticaria, angioneurotic edema, asthma, and various vasomotor disturbances, one is at once in the midst of a heterogeneous mass of hypotheses, none of which has offered anything of therapeutic value and few of which can boast of ardent protagonists. Probably closely allied to such conditions are hay fever, obscure abdominal attacks, migraine and epilepsy. To state that most cases of anal pruritus are allergic in origin, however, merely evades the issue and contributes little toward a solution of the problem. One can easily say that it is an allergic manifestation or that there has been alteration in the chemistry of the body tissues, secretions, fluids, and so forth, but the mechanism of the process remains unexplained. It is the indefinite type of the disorder, then, which can be classified under the heading of indirect pruritus, and I feel it is more likely to be encountered in those instances in which there is little gross evidence of pathologic change in the tissues of the pruritic zone. Some of our cases at the clinic in which there was the most marked disturbance of sensation had no observable gross change in the skin. A fruitless search for an etiologic factor in such an instance causes one to lean toward the diagnosis of allergy.

There is still another type of the disorder which should be listed under the heading of the indirect type; namely, that which afflicts individuals who have an idiosyncrasy to certain foods. There are patients who know that certain foods will produce anal pruritus. One wonders why other allergic disorders are not more frequently found in association with anal pruritus, but seldom do such individuals complain of hay fever, asthma, or similar allergic conditions. At the clinic we have observed a number of instances in which idiosyncrasy to foods has been noted. Doubtless many physicians, after having given credence to the idea that a case of anal pruritus may be attributable to food, have met with disappointing results. Nevertheless, a patient who has anal pruritus should not be turned away until he has been given the benefit of study aimed to discover such a source of his trouble. Thus there are several types of indirect anal pruritus: first, indirect pruritus of neurogenic origin; second, indirect pruritus due to focal infection; and third, indirect pruritus of allergic or idiosyncratic origin. No investigation should be considered complete until all of these possible causes have received due consideration.

In the majority of cases, however, anal pruritus is of the direct type. Whether the local pathologic changes result from the activity of bacteria, or of their toxic products carried through the lymphatic chains, is unimportant. Tissue changes do develop, and the most likely reason for their appearance is the direct effect of bacteria or their toxins, or both. This explains the reaction of the tissues, but it is not pretended that reaction of tissues is synonymous with itching. As yet, no one has explained itching.

This discussion cannot be closed without further reference to infection with fungi. Although we have seen this at the clinic, we have found it to be unusual and often there is a definite connection between the anal lesions and a trichophytic disease

elsewhere in the skin. Pinworms should not be overlooked. One of our patients at the clinic was treated in the usual way and, although our diagnostic investigation was exhaustive (examinations of stool included), we later learned from the patient that several months after she left our care she began to have trouble with "a new and peculiar type of itch" which provoked another examination and this time "pinworms were found." Following proper treatment her recovery was prompt and complete.

Itching is of course the predominant, and at first the only subjective, manifestation and there is no need for further discussion of its everlasting, unyielding character. The concomitant soreness due to irritative discharges and secretions over factitial excoriations and ulcerations also has been described sufficiently. However, this additional comment should be made. A physician should not brush lightly aside the problem of one who consults him because of anal pruritus. It makes no difference how overbearing and intolerant the patient may be and, regardless of his total undesirability as a patient, there is ample reason for everything that is wrong about him. He may be totally unreasonable, but this should not be laid to his nervous instability or any psychic derangement. The neurogenic hypothesis of the origin of anal pruritus may fit well with the conceptions of the modern dermatologist who says that the sympathetic nervous mechanism can and does produce concrete, visible, vesicular eruptions which itch and discharge serum on various portions of the surface of the body. However, the physician must not be so cruel as to send a patient who has anal pruritus on a vacation trip with the hope or promise that he will thereby be relieved of his trouble. What a way to spend a vacation!

After the patient has been examined with the proctoscope and it has been found that there is no gross abnormality in the rectum, and that only whitish, corrugated, lichenified folds of skin about the rectal outlet are evident, he should be taken to the physician's office and given an explanation in a quiet, patient and kindly manner. The patient is informed that many tests will be necessary. Teeth, tonsils, prostate gland or uterine cervix, and all other possible foci will have to be investigated. Specimens of stools must be examined. Various analyses of the blood, urine and so forth must be made. The skin sensitization test should be described in detail. If the pruritic onslaught appears to be extreme, treatment may be discussed. The patient is told that an injection of alcohol, properly performed, will completely and immediately stop the itching and that, after that has been done, the investigations may be carried out. He is informed, further, that the injection, if successful, will be followed by sloughing of the tissues where the itching manifested itself and that subsequent healing not only will be slow, but must be observed closely; a minimum of six to eight weeks probably will be necessary for the treatment. If, following this statement, the patient appears dissatisfied and feels he is unable to remain so long, it is immediately evident either that he is in the early stages of the disease and that simple, palliative measures will suffice for the time being, or that he needs instruction in personal hygiene. If, on the other hand, he does not object to the duration or the nature of the treatment, it is clear that he has real anal pruritus; its degree is in inverse relation to the concern which the patient shows when informed that the investigation and treatment must be long and tedious.

Two problems are to be dealt with in every case of anal pruritus; first, the systemic features, such as foci of infection, bowel habit, allergy, and so forth; and second, the local symptoms. Inasmuch as the pruritic discomfort usually is the paramount issue, we usually treat that condition immediately, and when the patient has recovered sufficiently the other factors receive our attention. During the convalescent period following the injection, there is usually ample time for tonsillectomy and dentistry. Skin sensitization tests also can be carried out during convalescence and, if dietetic treatment is necessary, it can be started then. Therefore, when the patient is ready to leave, not only will most of this work be completed, but he will be thoroughly familiar with the intricacies of his problem and will be in a position to manage himself intelligently after his return home. He may require treatment for a parasitic disorder of the bowel or his prostate gland may need prolonged treatment. All of these call for time and patience. The injection treatment merely gives the patient comfort and makes it possible for him to live in peace. Removal of the cause can be expected only if attention is given to the causative influences.

I believe that, with few exceptions, the treatment which we give each day during the six or eight weeks following injection of alcohol is largely responsible for the patient's relief. During the period of slough following injection our patients are treated with irrigations, medicated tampons and hot packs which effect the anal crypts through which much of the trouble comes. Abscesses may form and require incision; loose margins of tissue must be excised. Fortunately anesthesia is not necessary for this part of the procedure because the alcohol has provided it. Injection of alcohol entails some slough, and even some deformity. In fact the tissues must slough or the relief of itching

will be incomplete. The patient must understand that the object of the treatment is destruction of the nerves of sensation in the zone of itching and that other tissues also must be sacrificed. There is no loss of control if an injection is properly given, as statistical records will show, but often there is an extreme loss of the superficial tissues of the anus and its external margins, and because of this we never fail to impress on our patients the possibility of a secondary operation in order to correct contracting deformity. Occasionally this has been necessary, but it has never been a matter of real concern.

The treatment consists in subcutaneous injection of alcohol beneath all the area where itching has manifested itself. This zone can usually be outlined with little difficulty by observing the changes in the skin itself. It looks leathery and it may be moist, or dry and scaling. The margins of the anus present a variable degree of redundancy and the skin has a peculiar whitish, parboiled appearance. Hair is usually absent.

At this point I shall digress to consider the problem which arises when coincident pathologic conditions exist. Correction of such disorders as internal or external hemorrhoids, hypertrophied anal papillae, or fissure, usually will not produce cure of anal pruritus. An occasional patient may be relieved by such methods, but such occurrences are infrequent. I have seen patients who were relieved of itching for many months following hemorrhoidectomy, but in this connection I have been more impressed with the value of postoperative care and with the care which the patient had learned and had carried out consistently since his operation than with the effect of the operation itself. Fistulas or discharging sinuses are more likely to be factors in the production of pruritus than the conditions just mentioned, but even fistulas and sinuses often are due to the same infective invasion of the anal crypts as that which produced the lichenification and itching. At all events, the proper attitude to take in regard to all these conditions is that they are a part of a pathologic process, instead of a cause of it, and that they need attention as well as the pruritic disease before a comfortable and satisfactorily functioning rectal outlet can be assured.

Occasionally it is difficult to decide which should be done first; but in general if operation is necessary for hemorrhoids or other abnormalities, it is better to do this and to allow sufficient time for complete healing before injection of alcohol is attempted. This is especially true when an abscess or other active inflammatory disorder is in progress. We cannot too strongly advise against injecting alcohol or any other solution into such tissues. When, however, it is decided that an operation is necessary, the patient should be made to understand that it is not being performed to cure the pruritus and that treatment for the pruritic disease must be carried out separately. If the itching should be relieved by the operation, nothing will be lost, but if it is not, the patient will have no grounds for complaint. Therefore, after the pathologic conditions just mentioned have been surgically removed and complete healing has been established, alcohol can be injected.

The injection of alcohol is not an office procedure, and not only is it necessary to confine the patient to the hospital for its administration, but the injection must be preceded by anesthesia. Preparation of the patient and anesthesia are the same as for any operation on the same region. The anus is dilated so carefully that the anal margins are not broken. The dilatation is necessary to spread out the folds of skin. This makes possible uniform injection beneath the skin; without dilatation, the solution cannot be placed beneath the crevices which lie between the thickened folds of tissue. If there are breaks in the skin, the solution will leak out and injection will not be uniform. It is necessary to use care in injecting the solution beneath the anal wall, especially in the region of the pectinate line; this cannot be accomplished unless the anal orifice is suitably relaxed. Dilatation should therefore be complete, but it should be accomplished very slowly and gently. Forty per cent alcohol is used as the injection medium and the amount injected depends on the degree of involvement. Rarely is it possible to complete an injection with less than twenty cubic centimeters of the solution, but it never should be necessary to inject more than thirty-five to forty cubic centimeters.

The solution is injected in much the same fashion as anesthesia is administered by local infiltration with the important exceptions that none of the alcohol is injected into the musculature surrounding the anus and it is better not to make multiple punctures. A 20 gauge needle, about ten centimeters long, and a twenty cubic centimeter graduated glass syringe, like that used in administering sacral anesthesia, are employed. The entire injection should be made through one needle puncture; but, if difficulty is encountered in infiltrating an area lateral or anterior to the anus, two or three additional punctures may be made. It is surprising with what ease the alcoholic solution flows out of the subcutaneous tissues through any abrasion and, if multiple needle punctures are made, it is not unusual for the solution to flow rapidly out of these puncture points as it is being injected beneath the skin near by.

The needle is inserted posterior to the anus, beyond the border of the visible pruritic zone. This can be done before the syringe is attached because alcohol is not injected while the needle is being inserted. It is unlikely that a blood vessel will be pierced, although this could conceivably happen when the point of the needle is moving forward. Injection is not begun, therefore, until the point of the needle has been carried beyond the posterior and lateral aspects of the anal orifice and has come to rest beneath the skin of the anterior anal wall. The index finger or the index and the middle fingers of the left hand are inserted in the anus to guide the needle. Then the syringe is attached, and as the needle is slowly withdrawn posteriorly, the solution is gradually made to fill the tissues beneath the skin. During the course of the injection the fingers within the anus are actively smoothing out folds and adjusting the tissues so that no area will be left uninjected. If injection on one side is incomplete after the first maneuver, the needle should be inserted again until it reaches the anterior border of the area to be subjected to injection, and again the solution is injected as the needle is withdrawn. When the injection has been completed on one side, the needle is withdrawn to the original point of entry into the tissues posterior to the anus, is passed beneath the skin of the other side to the perineal border of the pruritic zone, and a similar injection is made on that side. It may be difficult to inject the perineal region through the posterior puncture and, as I have stated, it is permissible to withdraw the needle under such circumstances and to insert it at a more convenient point.

Solution never should be injected into the anal sphincters and too much solution should not be allowed to accumulate in one area. Serious complications may arise if too heavy an injection is made beneath the perineal skin of male patients. Abscesses often form following this treatment and such a development in the male perineum may involve the structures adjacent to the urinary apparatus and may endanger the membranous urethra itself. A successful result cannot be expected unless injection is thorough. It is especially important for the solution to accumulate beneath the skin of the sensitive pectinate line. After the injection has been completed, it is well to massage the entire area of injection with a small wad of gauze or cotton. This is done to secure more uniform distribution of the solution and should be done with extreme gentleness. Postoperative dressing is not necessary unless the anal margins have been broken in the course of dilatation. The entire area is painted with tincture of metaphen and a small piece of cotton is tucked into the anal orifice.

Invariably the pruritus is entirely and immediately relieved and the patient sleeps uninterruptedly each night until sloughing sets in. He expects this, however, and accepts it. On the day following injection, ecchymotic discoloration usually appears over the region of the injection; other than this there is nothing worthy of note. The patient may do about as he pleases, and he is advised to be up and about because at any time, usually from the third to the sixth day, the inflammatory reaction begins and after that he must remain in bed, so that hot dressings or ice packs and other treatment can be administered. Abscesses are opened immediately, sloughs are dealt with as indicated, and the bowel is carefully cleansed by enemas and irrigations following each evacuation. In many cases frequent dressings are necessary and the surgeon may become discouraged as he observes the unpleasant result of his handiwork. There may be a bad odor, and it may appear impossible to restore the outlet of the bowel to anything like its normal state, but perseverance will win out. However, such a wound must not be neglected. Rarely will the patients be discouraged unless the itching returns. The discomfort which attends the inflammatory condition does not concern him in the least; he is glad that he has it and considers he did well to exchange the itching for it.

The patient is treated for four to eight weeks, and sometimes even longer. His time is occupied in care of the teeth, tonsils, and so forth. Skin tests and dietary instruction employ him further. In all, he is busy and contented for the first time since the trouble began. Thus is this psychoneurotic, intolerant and undesirable person transformed into a normal appearing and even likable individual.

WHAT CAN BE DONE ABOUT MENTAL ILLNESS?*

G. Lee Sandritter, M.D.
Assistant Superintendent, Norfolk State Hospital
Norfolk, Nebraska

In studying any problem there are several ways to handle the situation. It can be approached from a purely theoretical standpoint or from a practical standpoint. It just so happens that my contact with the problem of mental illness has been, to a large extent, concerned with the practical, and the necessity of considering dollars and cents tends to keep us thinking of the practical

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side of it. We try not to lose sight of the theoretical side, however, and make every effort to maintain our interest in this view of mental illness so that we may not miss some of the facts found through the theoretical study, which we may, in turn, use to solve the practical side of the problem.

A diagnosis should contain the cause of the problem, the status of the problem today, and what efforts are being made to correct that problem in the future. When we consider the cause of mental illness, we find ourselves at a great loss. There are many, many theories as to causes. The very fact that there are so many theories would seem to indicate that no one knows. This might tend to discourage us from attempting to solve the problem, but when we stop to consider whether we ever know the cause of anything, we soon arrive at the conclusion that in this world we never know exact causes and effects, but rather we know incidents and relationships. To illustrate, let us consider the fact that we think of the rising of the sun as causing day to come, but when we look at this a little closer we see that the turning of the earth brings us on the side facing the sun, which, in turn, makes the sun rise; therefore we have one more relationship in our cause and effect world. We can go a little further and see that the earth is one of a group of planets that revolve about the sun and this adds one more fact to our system. We can go still further and see that the sun is only the center around which our solar system revolves, and that this solar system is only one small system in the great universe. Why the planets revolve about the sun, why the solar system has a certain place in the universe, we do not know. This may lead us back to the fact, does the sun cause the day to come, or is it just that there is a relationship between the sun and daylight? I think the latter is probably a little more nearly correct.

When we study any system of knowledge, then we arrive at the fact that we do not know the cause and effect, but we know relationships, and as far as we can increase our knowledge of relationships we understand better the mechanism of that particular phenomenon. Coming back to our subject, I do not think we know what it is; but, we do know what it is like, and we can compare it to other things. We can show the relationships and in this way we can increase our general understanding without knowing exact facts. Medicine in general has looked with disfavor upon the theoretical causes of mental illness, and because they could say that the tubercle bacillus was the etiologic cause of tuberculosis, and that many of the other diseases were caused by definite germs, they have felt that we were on very unsafe and unsure ground, but this is more apparent than real. If we go back to the subject of tuberculosis, as an example, we find that a great many people carry the tubercle bacilli around in their systems and even have definite evidence of activity, without the individual ever becoming sick and developing the disease which we know as tuberculosis. The medical man talks about various reasons which he explains to the layman as "resistance" of an individual; when we ask him what "resistance" is, he is at a loss to know, and he falls back upon many ways of explaining what he terms "resistance to infection." However, when we examine those carefully, we find that they are a large group of relationships and never definite causes and effects.

What is mental illness? It can be likened to a caricature of a personality in the same way that a cartoon may be a caricature of a person's physical features, or relationships. To get this effect the cartoonist draws some particular physical features out of all proportion to the rest of the individual's physical make-up and the result is a grotesque resemblance. Mental illness may be likened to a machine in which one of the systems, take for instance the electrical system of a motor car, is out of its usual balance, thus causing the motor to misfire or to become mixed up, and destroying the efficiency of the motor car. We find that man, as a human machine, is subject to stimuli from without. Some of these may warp part of the mental make-up and destroy the efficiency of the individual's personality. Mental illness implies that there is an illness of the mind, which brings us to the question of "what is mind?" I do not know the answer to this question, and I doubt if anyone does, but we do know that it has a function. We know that the function of the mind is to make judgments, and as long as the mind is functioning efficiently, or making judgments which will help us to adjust to the conditions of the world and people about us, we think we are normal, average people, and that we are mentally healthy. Comparing this to a physical illness, we find that anything which disrupts the harmony of the physical body or the efficiency of its work, we term "illness," such as pneumonia, coronary thrombosis, etc. The first mentioned interferes with the function of the lungs to transfer oxygen through the blood, and the second interferes with the work of the heart, as a pump, to supply the tissues of the body with food. I, therefore, raise the question of whether, after all, we do not know almost as much about causes of mental illness as we do about causes of physical illness. It is true we do not always know quite as much about relationships, but we are learning.

What causes mental illness? Again we must admit we do not know. There are many theories,

but the very diversity of these theories indicates that little is really known. We do know that anything which will make it difficult for an individual to adjust to his surroundings is a factor, which brings us to the consideration of environment. While environment is not the only factor of importance it is one which we can perhaps some day control. Heredity is a very important factor. There are, without doubt, limitations within which the organism can develop, and this is probably as true of the mind as it is of the physical make-up. However, there is little we can do about our heredity, and it is probable that in spite of studies on eugenics we will never be able to do a great deal about it, although it is true we can, to a certain extent, control it by eliminating propagation from those people whom we know can produce only imperfect offspring. These conditions bring to us a relationship that there is in every individual; limitations or the things we know as personality, composed of what he has been, what he is, and what he desires to be, plus the dynamic factor of the way he feels about it and what he does about it. Warping in any of these fields may become severe enough to become distinctly noticeable, and so to handicap the personality that it will be unable to adjust to the situations in which it finds itself. When this happens we term it mental illness. Why one man can adjust to certain things and another man cannot, we do not know any more than we know why one person develops tuberculosis and another one does not. What causes mental illness? Hereditary limitations to the personality, plus environmental walls which the individual cannot adjust to, plus the dynamic factor of the way he feels and attempts to adjust to it, give us an idea of relationships.

What can be done about mental illness? This depends on what theory we hold as to the cause of mental illness. If we are a follower of Freud, we assume that psychoanalysis will clear up the individual's difficulty. From the practical standpoint this is inefficient because there are not enough psychoanalysts in the world to take care of all the people who have mental problems, and since not every person who has a psychoanalysis recovers his mental health, this is only practical to a limited degree. The practical man in any field has always taken that which he could use and which apparently obtained results for him. The results which we want are patients who have been unable to adjust to life situations taking their places in society again and adjusting themselves. The practical man is always willing to take advantage of anything which will help him to do this. Long before there was a study of psychiatry, before there were any psychiatrists, there were always some practical, common-sense individuals who seemed to have the ability to understand how other people felt and thought. These men believed we lived in a reasonable world and that men could adjust if they only knew enough about relationships. It seems only reasonable that if these people have always been able to accomplish something in this field, and since we know so little today about causes and effects, we would accomplish more in treating mental illness if we took this common-sense attitude toward things and tried to think of the individual who was sick as a poorly adjusted individual, as a machine in which one of the major systems was warped and causing the whole organism to function inefficiently, or to take a dynamic view of the factor of mental illness. We used to think a man became "crazy" because of some taint of heredity, and when once crazy we put him in a hospital to keep him from injuring himself or someone else, but we never hoped he could ever take his place in society again. This old idea of mental illness, or as it was termed "insanity," is comparable to the attitude which was taken toward the bubonic plague, tuberculosis, and many of the other dreaded illnesses. Many years ago these diseases were considered as being sent from Heaven, and that by adjusting to these diseases, people were bearing up under the severity of God's will—bringing man's soul into tune with that of the Almighty so that he could accept God's will without question. We are no longer satisfied to look at the situation in that light. We now doubt if it is God's will for anyone to suffer; rather, we take the attitude that it is up to us, as civilized people to understand relationships and make it possible for personalities to adjust to things which come to them.

What can be done about mental illness? Let us learn something from the progress which medicine of the physical body has taught. It has taught us that no medicine, no drugs, and no magic can compare with rest for the organism. We have known for years that the knitting of a broken bone requires immobilization so that it can have rest. We know that to recover from pneumonia an individual must cut down on the amount of oxygen he needs so that his diseased lungs can adequately take care of it, and he does this by limiting his activity. We know that the individual with coronary thrombosis must have rest. We cannot stop the heart beating, but we can diminish the amount of work which the heart must do. We know that if we do those things a large percentage of the people will get well, if rest is instituted early enough. If we use the same technic in mental illness, it means we must reduce the amount of work which the mind does, and since the mind's func-

tion is to make judgments, we must eliminate any mental activity which would tend to increase the judgments which the mind must make. To do this the individual must get away from home, must get away from people he knows, and friends and relatives; he must have all problems decided for him; he must have a routine way of living from day to day, such that he has to make no judgments whatever for a time. If the patient has not gone too long, the organism will reassert itself and come back to so-called normal functioning. All mental therapy is, or should be, aimed at giving rest to the mind. It is true that many of the minor mental illnesses can be treated without hospitalization, exactly as many of the physical illnesses can be treated without hospitalization. There comes a time, however, even though we cannot always determine it, when the individual must have hospitalization or more complete rest than he can gain in his usual habitat, in order for the organism to regain its normal balance. The most important questions for physicians to decide is how severe is the imbalance, whether it is physical or mental, and how much rest, either physical or mental, that individual must have to regain his normal balance.

Statistics show that people with mental illnesses who receive treatment aimed at giving the mind rest within a year of the onset of the definite symptoms, have a very good chance of recovery. The same statistics show that those people who have been sick longer than a year have less and less chance of recovering their mental health, in proportion to the length of time they have been sick. This is true, regardless of the type of therapy instituted.

It is not my intention to go into a study of the special types of therapy. Suffice it to say that the new glamour technics of treatment for mental illness are of very definite value. Whether we will think they are as valuable in ten years as we do today, I do not know; but at the present time we feel they are helping us to bring these individuals into closer contact with reality and, therefore, they are of value to us. If the secret of successful treatment of all illnesses depends on early treatment, we must solve this problem of mental illness by seeing that these patients receive treatment much earlier than they ever have in the past. The problem for the state is that more and more people are having to be cared for in more and more hospitals, paid for by taxes, which in turn are paid by the citizens of the state. Without going into the question of whether mental illness is increasing or not, we do know definitely that the number of people who are needing and demanding hospital care for mental illness is increasing. It seems only likely that since the function of the mind is to help the individual to adjust, and since the more crowded we become in our communities, the more things there are to adjust to. It follows, then, that more and more people will find situations to which they cannot adjust, and more and more people, therefore, will need hospitalization, or a place to get mental rest, providing their maladjustment is severe enough to require it.

Why do people not come to the physician for treatment early enough if it is so essential that successful treatment means early treatment? The reason is that they are not aware of this fact. They still think that any individual who becomes "crazy" does so because it is a special dispensation of God, or that it was inevitable, as a result of some hereditary taint. Therefore, they keep their relative from going to a state hospital or to a private psychiatrist, though they could well afford to pay him, hoping against hope that the condition was not inevitable. The result is that after years, when they themselves have had a great deal of added burdens to bear, in order to save their own mental balance or adjust to problems, the patient is finally sent to the hospital for treatment. By this time, however, after years of having followed a certain way of thinking about the world, the patient no longer has the ability to reassert or reëstablish his ill-balanced reaction toward reality, and to the original difficulty in adjustment is added the problem of breaking a habit. The result is that many of them do not ever recover because they cannot find a more suitable way of adjusting than the one which they now have; they have become reconciled to living in their own world even though they may be peculiar. Because people still have a feeling of stigma about the hospital, they do not come until the last moment, and then it is usually too late to help them recover from their mental illness.

To handle this problem, then, an educational program must be carried out to make people realize that before the individual becomes insane, he has been mentally sick for some time; they must be taught the early symptoms of poor mental adjustment: they must be informed that continuous pain of the mind, day after day, week after week, is just as much a reason for going to a doctor as is pain in the body which stays with him week after week: they must be taught that early treatment offers the best chance of recovery. After people begin to learn that they can recover if they have early treatment, they will begin to lose that feeling of stigma and shame concerning relatives in the hospital. Then our problem will not be any more serious than that of tuberculosis or any of our other dreaded diseases.

To carry out this program of reëducating people we must add to the facilities of the hospital. I am adding this work to the State Hospital because it is too extensive and detailed a program for a lay group to carry efficiently, and since it is of such vital importance to the state from the standpoint of dollars and cents, it is going to be necessary for the state to carry the burden of reëducating the people. Since there are so many communities in the Middle West without the services of a physician trained in diagnosing and treating mental illness, the question of obtaining this educational service is an important one. The only way the Middle West can have this service is for a physician from a State Hospital to hold clinics in the county seats for the purpose of consulting with the family physician. These Consultation Clinics should be held as often as necessary to handle the work of the community. In the smaller communities once every two months might be often enough. In some of our larger centers we might need one every week. These Consultation Clinics should serve as sources of information where the family physician, school authorities, the minister, and anyone dealing with the social problem of adjustment, could refer patients for diagnosis and advice as to proper care and treatment. These patients should have had a previous physical check-up by the family physician before being seen by the consultant. The consultant should also carry on an educational program of disseminating information on mental illness to the community.

We must have another change in our hospital system also if we are to care for these people who cannot afford to go to a private psychiatrist; these people with minor mental illnesses, who cannot afford private hospitalization, must be allowed to apply for treatment at the State Hospital, upon the recommendation of their family physician, for a period of from three to six months, without a commitment. Such a change would enable many people to have earlier treatment, since they would escape the shame and stigma of a commitment. Since the state's burden is getting larger every year, and we do not have adequate facilities for handling the problem as we see it today, this would automatically keep the state from competing with private psychiatrists and accepting as patients people who could well afford to go to a private institution or a private psychiatrist for treatment. The family physician would also serve as a means of defense against the state competing with the private physician, and a defense of the state against allowing a patient of adequate means asking for care by the state. The state facilities are totally inadequate to handle this sort of program at the present time. An additional expenditure of money would be necessary, and to put this additional money to its most useful work, an individual with unusual judgment and foresight should be secured, in order that full value may be gained from every dollar which is spent. We must completely eliminate politics from the State Hospital system, and have an individual in charge of this system who could be held accountable for producing desired results. This individual must have a dynamic view of mental illness; he must be a smart business man to make sure that the hospitals are functioning from the standpoint of economy; he must be an executive, for the State Hospital systems are huge business organizations; he must be an individual with vision to see into the future, and with sufficient force of character to carry on toward this vision in spite of handicaps and very slow progress. He must not only be able to do this and see this for himself, but he must be able to teach others to see this vision, and after this, then, perhaps we will have conquered the problem of mental illness.

PRIMARY CARCINOMA OF THE LIVER WITH SPONTANEOUS RUPTURE*

A. L. Jenks, M.D., and L. D. Powell, M.D., Des Moines, and D. H. Kaump, M.D., Temple, Texas

Reports of cases of spontaneous rupture of the liver are rare. We are reporting this case because of its unusual character. We have been able to find only two cases distinctly comparable to ours. It is hoped that the presentation of our case with a brief summary of the pertinent findings in the cases previously reported, may help to clarify the clinical picture of this obscure syndrome.

CASE REPORT

This Filipino, thirty-eight years of age, was admitted to the Iowa Methodist Hospital, July 5, 1938. For a period of six weeks he had had occasional epigastric pain which occurred about one hour after meals and lasted for approximately forty-five minutes. On the day before admission he had pumped water from the well on his father's farm. About 8:00 o'clock on the evening he felt a sudden, severe, upper abdominal pain which gradually became worse; by 2:00 A. M. on the day of entrance to the hospital, the pain had extended to the right lower quadrant. He had had two bowel movements, one of which was solid and one liquid, and he had vomited once. He likewise noted dizziness and dyspnea on the slightest ex-

*From the Iowa Methodist Hospital, Des Moines, Iowa.

ertion. At 2:00 A. M., one of us (A.L.J.) was called and sent the patient to the hospital.

At the time of admission to the hospital he had a diffuse tenderness of the abdomen which was most marked in the epigastrium and in the upper portion of the right lower quadrant. His blood pressure was 64/46, and the pulse, 104 beats per minute. The erythrocyte count numbered 4.72 million and the leukocytes 23,500 per cubic millimeter. The hemoglobin determination was 85 per cent (Tallquist), and the differential count was neutrophiles, 89 per cent and lymphocytes, 11 per cent.

With a probable diagnosis of ruptured duodenal ulcer, an exploratory laparotomy was conducted at 5:15 A. M. A hematoperitoneum was found in which the blood apparently came from a ruptured nodule on the inferior surface of the left lobe of the liver. From this nodule a thick grayish yellow material freely exuded, some of which was obtained for biopsy. A pack was placed next to the ruptured area, the peritoneal cavity was drained and the operative wound closed in the usual manner. The patient rapidly became worse and expired at 9:55 A. M., four and one-half hours after the operation.

Necropsy Findings: Gross. Of the pertinent findings at necropsy may be included the following: approximately 1,000 cubic centimeters of freshly clotted blood was found in the peritoneal cavity, most of which was in the right upper quadrant. The coils of intestine were covered with blood, but otherwise appeared to be quite normal. The liver margin projected two centimeters below the right costal margin and this organ weighed 1,900 grams. It was reddish brown in color, had a smooth glistening surface with distinct markings and normal consistency except for the anterior half of the left lobe. In this area, there were several confluent firm, grayish yellow nodules, the largest of which was seven centimeters in diameter and penetrated deeply into the substance of the liver. It almost completely replaced the anterior portion of this lobe. In the largest nodule were soft, almost fluctuating areas, and on its left margin there was an irregular circular area of perforation one and one-half centimeters in diameter from which hemorrhagic and necrotic material freely exuded. In the lower jejunum there was a small slightly lobulated mass approximately two by one and one half by one-half centimeters in size. This mass apparently did not involve the mucosa and presented almost entirely on the serosal surface. In the left kidney there was a well healed depressed scar one-half centimeter in diameter as well as a cortical cyst 1.2 centimeters in diameter. The cystic mass was filled with clear straw colored fluid.

Necropsy Findings: Microscopic. Microscopic examination of the liver tumor proved it to be a primary liver cell carcinoma. The tumor cells were large, with abundant pale cytoplasm and large, somewhat hyperchromatic nuclei. The nucleoli were proportionately even more enlarged, prominent, and assumed a deep basophilic stain. Occasional multinucleated giant cells were seen. At the border of the tumor mass, the liver cells were somewhat compressed, but otherwise the liver parenchyma was unchanged. In sections of the jejunal mass was seen what appeared to consist entirely of pancreatic tissue in which the acini and ducts were normal. There were a few apparently normal islands. At one point just beneath the submucosa, the many ducts converged



Fig. 1. Inferior surface of the liver. Note the point of rupture in the tumor nodule present in the left lobe.

into several main ducts which in turn emptied into the lumen of the bowel. At this point in the jejunum, the mucosa was eroded over a very short distance. The base of the ulcer consisted of fibrous tissue and necrotic material. The mucosa immediately bordering the ulcer was likewise somewhat necrotic and had a distinctly overhanging margin.

REVIEW

Schnabel, and Mast and Streamer, have reported similar cases in American literature. Schnabel reports the material from the Philadelphia General Hospital and states that among 27,000 autopsies, rupture of the liver had been noted four times. In two of these four, there was a definite association with trauma; the cause was not given in the third; and the fourth constitutes the report which he made. His patient was a Chinese male, sixty-six years of age, who was admitted to the hospital with the complaints of abdominal discomfort, dependent edema, and nocturia. On examination his blood pressure was 152/95. The

liver was palpable and slightly nodular; the prostate gland was enlarged. His course, until the twentieth day after admission does not seem to be particularly pertinent except for the icterus index which was 50 and the presence of bile pigment in the urine. On the twentieth day after admission the patient had a sudden collapse, became cold and clammy, gasped for breath and died. At necropsy there was a hematoperitoneum. The liver weighed 4,900 grams, and its substance was almost completely replaced by carcinoma. On the anterior aspect of the right lobe, one mass had ulcerated through and caused bleeding. There were metastases to the lung and hilus nodes. Microscopically this case proved to be a primary liver cell carcinoma.

Mast and Streamer report the case of a white male, thirty-four years of age, who for six years had noted gas and constipation and over a two year period had lost twenty-five pounds in weight. The patient was a farmer who on September 10,



Fig. 2. Anterior posterior section of left lobe. The anterior half of this lobe is largely replaced by tumor tissue. The point of rupture is on the inferior surface.

1932, drove his tractor as usual. On the next day he had a sudden lancinating pain in the right upper quadrant, not referred, but accompanied by nausea and mild shock. On admission to the hospital his temperature was normal and his pulse was 130 beats per minute and weak. The patient was in shock. There was some anemia and slight icterus. There was evidences of bronchopneumonia of the right lung, a systolic murmur at the apex, and rigidity of the right upper quadrant where a mass was palpated. The abdomen was distended. The leukocyte count per cubic millimeter was 13,700 with 86 per cent polymorphonuclears, of which 12 per cent were immature forms. The hemoglobin was 65 per cent and the erythrocyte count 3.12 millions per cubic millimeter. There was two plus albumin in the urine with many hyaline and coarsely granular casts. This patient rapidly grew worse, the pulse rate rose to 160 beats per minute and the temperature to 106 degrees. He died on the fourth day after admission to the hospital. At necropsy an extensive bronchopneumonia was found at the right base, and enlargement of the heart with chronic mitral endocarditis. There was a hematoperitoneum of 1,500 cubic centimeters. The liver weighed 3,360 grams, and was filled with carcinomatous nodules, the largest of which measured ten by twelve centimeters. In the lower anterior surface of the right lobe of the liver, there was a deep rent in the capsule and substance approximately three and one-half centimeters in length. It was from this rupture that the blood had escaped.

Three somewhat analogous cases of spontaneous rupture of the liver have been reported. In the first of these, Depping reviewed the case of a Chamorro, fifty-five years of age, who died of a spontaneous rupture of the liver. In this case the liver was huge, soft, friable and mottled grayish green in color. On section numerous necrotic

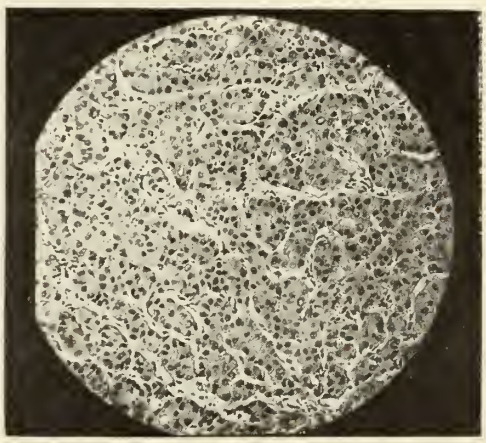


Fig. 3. Microscopic section of liver tumor. Note the definite liver type cell and suggestive hepatic structure.

areas from pea to walnut in size were noted in which there was considerable fatty degeneration. One of the necrotic areas of the lower margin of the right lobe had broken down and bled.

McEwan and McEwan report one instance of spontaneous rupture of the liver in malaria. Their patient was a girl, eight years of age, on whom a diagnosis of tertian malaria was made by smear of the blood. Following the administration of quinine, she developed pain in the right upper quadrant which became progressively worse over a period of two weeks, at the end of which time she had a sudden onset of very severe pain in the right upper quadrant accompanied by a cold sweat. At operation there was a rupture of the right lobe of the liver near the inferior margin and the anterior surface. This patient died fifteen hours after the operation. These authors say, "Undoubtedly focal necrosis took place in the liver substance, resulting in hemorrhage, disten-

TABLE 1

AUTHOR	AGE	SEX	RACE	RECENT PAST MEDICAL HISTORY	ACUTE EPISODE	PROCESS RESPONSIBLE FOR RUPTURE	RESULT
Schnabel	66	M	Chinese	Vauge abdominal discomfort, elevated icterus index (50), bile pigment in urine	Sudden collapse, cold, clammy skin, shock, dyspnea	Primary liver cell carcinoma	Died
Mast and Streamer	34	M	American	For six years gas and constipation, two years 25 pounds weight loss	Sudden R.U.Q. pain, nausea, mild shock, anemia, slight icterus, rigid abdomen	Primary liver cell carcinoma	Died
Authors' Case	38	M	Filipino	Six weeks epigastric pain one hour after meals	Gradually increasing epigastric pain, suddenly severe, shock, dizziness, dyspnea. Rigid abdomen	Primary liver cell carcinoma	Died
Depping	55	M	Chamorro	None given	None given	Focal necrosis	Died
McEwan and McEwan	8	F	American	Tertian malaria, pain in R.U.Q. which grew gradually worse	Sudden severe R.U.Q. pain, shock	Focal necrosis	Died
Bradley and Garrett	3	F	American	None	Suddenly ill, exhausted, very pale	Unknown	Lived

tion of the capsule, and subsequent rupture".

Bradley and Garrett report an instance of a girl, three years of age, who had a spontaneous rupture of the liver and recovered. Their patient became suddenly ill, exhausted and very pale. Sixteen days after the onset of these symptoms an exploratory laparotomy was done at which time there was noted a rupture of the right lobe of the liver. This rupture was packed and the patient finally recovered.

There are numerous cases of traumatic rupture of the liver reported in the literature. Shedden and Johnston state that the chief clinical features are as follows:

1. Pain in the right upper quadrant, although the pain may be generalized or not present at all.
2. Board-like hardness and exquisite tenderness over the involved area.
3. Increase in the liver dulness.
4. Shock.
5. Sharp rise in the leukocyte count with slow fall in the erythrocyte count and the hemoglobin value.
6. Jaundice which usually appears after the third or fourth day.
7. Occasionally there may be a slow pulse, perhaps due to the profuse discharge of blood and bile into the peritoneal cavity.

There are a number of reports available on rupture of the liver in the newborn. The usual history in these cases is that a normal child at three or four days of age becomes suddenly ill and dies rapidly. According to McNitt, the usual causes of this are pressure or torsion of the fetal abdomen and external trauma.



Fig. 4. Tumor nodule in jejunum.

DISCUSSION

The clinical picture of traumatic rupture of the liver is very similar to that of spontaneous rupture except for the recent past medical history in which there are several significant features. These may best be appreciated after consideration of Table I. In two of the cases summarized here and in our own case, there was an indefinite history of some intra-abdominal disturbance for varying periods of time preceding the acute onset indicative of rupture. In one of these, the case reported by Schnabel, there was an elevation of the icterus index as well as bile pigment in the urine. In the second group of three cases only one had a

definite past medical history and this was in the case reported by McEwan and McEwan in which tertian malaria had been present. In contradistinction to this, the history of traumatic rupture is initiated by definite injury, usually over the abdomen. In the case reported by Mast and Streamer there seemed to be a distinct analogy to the one we are reporting, in that the day preceding the onset of symptoms there had been some type of exertion. Our patient pumped water, while Mast and Streamer's patient had driven a tractor. In each instance this slight trauma may have initiated the chain of events leading to the actual rupture. With the onset of symptoms of rupture the symptomatology in both spontaneous and traumatic rupture appears to be essentially similar. In all instances, there is a sudden collapse with evidences of shock, circulatory failure and peri-

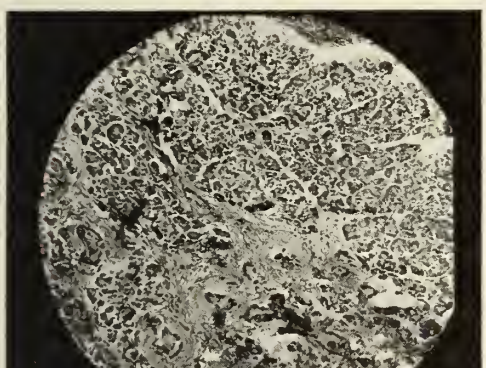


Fig. 5. Microscopic section of jejunal tumor. Note the pancreatic tissue and pancreatic ducts.

tonitis. In addition to the history and physical signs and symptoms which have been recounted, further aid to diagnosis may be utilized. Burke and Madigan have used thorotrast as a diagnostic aid in traumatic rupture of the liver and spleen. In their opinion thorotrast has practical application in the diagnosis of traumatism of the liver and spleen when the physical signs are obscured by any cause whatsoever. This agent should be equally applicable in instances of spontaneous rupture of the liver.

SUMMARY AND CONCLUSIONS

We have presented a case of spontaneous rupture of the liver and have reviewed the English literature on this subject. We have likewise included a brief summary of traumatic rupture of the liver as well as rupture of the liver in the newborn. We feel that the signs and symptoms of both traumatic and spontaneous rupture of the liver are essentially similar except for the recent past medical history. In spontaneous rupture there is usually a preceding history of abdominal disturbances over varying periods of time. Treatment in our case consisted of packing the ruptured area and we feel that this probably is the most efficacious treatment even though our patient did not survive.

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A POLLEN SURVEY IN AMES, IOWA, IN 1938

JULIA COLE, M.D., Ames

The first studies made in this country to determine the specific plants causing hay fever were those of Mullin[1] in Colorado in 1921 and 1922, and of Duke and Durham[2] in Kansas City in 1923. In these early surveys a field study was made of the plants in a given region, pollens were collected from the plants and skin tests were made with these pollens. It was soon recognized, however, that this method did not give much insight into the clinical hay fever problem of a community. In the solution of this problem essential data are the pollens actually in the air and the amounts in which they are present.

The technic of pollen surveys now used dates back, as does so much of our knowledge of hay fever, to the early work of Blackley in England, and has been modified and developed in this country by Koessler and Durham,[3] Scheppegrell,[4] Wodehouse[5] and others. Pollen surveys have been made in many parts of the United States. In the north central region Feinberg,[6] Koessler and Durham,[3] Huber,[7] and Waldblott and Steere,[8] and others have contributed surveys in various parts of Michigan, Illinois, and Indiana. Duke and Durham,[2] and MacQuiddy[9] have made studies in Kansas City and Omaha respectively. No studies have been published for Iowa although ragweed counts have been made by Dr. Zella White Stewart, of Iowa City, I believe, and by others. The hay fever problem in Iowa is very similar, of course, to that found in adjoining states in which pollen surveys have been made. There is justification, however, for local studies.

The treatment of hay fever by hyposensitization with pollen extract gives good results in a majority of cases but poor results with some patients. The reasons for the failures or partial failures are not entirely understood; no doubt many factors enter in. An occasional failure probably is due to the fact that the patient is sensitive to pollen which is present in appreciable quantities in his community but which is not included in the commercial treatment sets now widely used. Local pollen surveys would be of assistance with such patients. Another common mistake, I think, is treatment of a patient with a solution containing many different pollens, made up on the basis of reactions to skin tests. Some of these pollens can be shown by pollen surveys to be present in the air in very small amounts and their inclusion in the treatment solution probably is not only unnecessary but actually detrimental. Because they are included, the final dose of each pollen in the solution is reduced, with the result that the dosage may not be high enough to be effective for the pollens which really are causing the trouble. This mistake also would be avoided by a more complete knowledge of the local situation based on pollen surveys.

The present survey, combining field observations with pollen counts, was made in Ames in 1938, beginning with the tree season and continuing through the grass and ragweed seasons. The technic used in collecting and counting pollens is that recommended by Durham and used in most pollen surveys. Briefly, a glass slide is coated with a thin film of white vaseline. This slide is exposed for twenty-four hours, protection being given against direct rays of the sun and the wash of rain. In counting, a 10X objective and 10X eye piece are used. The count is started at the edge of the slide and continued the full width or one inch,

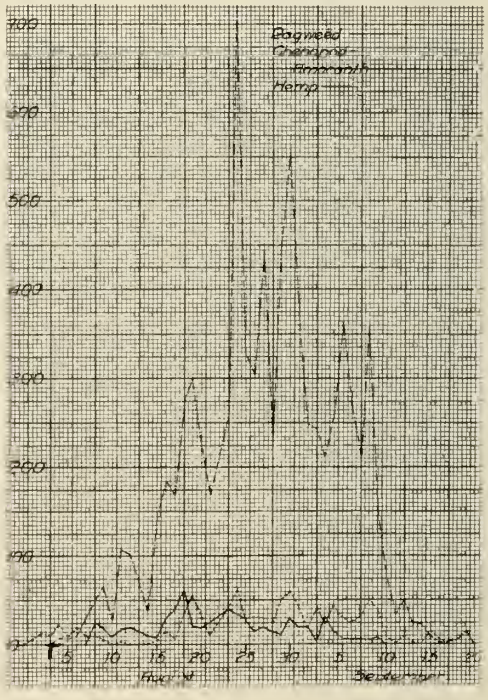


Fig. 1.

pollen grains being identified and tabulated as one goes. The field is then shifted and another strip the width of the slide is counted. In all, five such fields are covered.

Identification of pollen grains presents difficulties. The book by Wodehouse[10] is the most helpful publication on the subject. The best procedure, however, is to collect samples from the field and to learn size and structure from these. With the exception of corn which is easily recognized, it is impossible to differentiate among the grass pollens, and for these only total counts are given. The author does not feel completely sure of differentiation among the chenopods and amaranths

and in this survey the members of these two families are reported as one group.

In the city of Ames the trees which are most numerous are elm, oak, maple, and various members of the poplar family, with walnut, hickory, willow, and box elder seen less frequently. The same is true roughly in the surrounding countryside. Among the grasses bluegrass and orchard grass are seen most frequently in lawns and empty

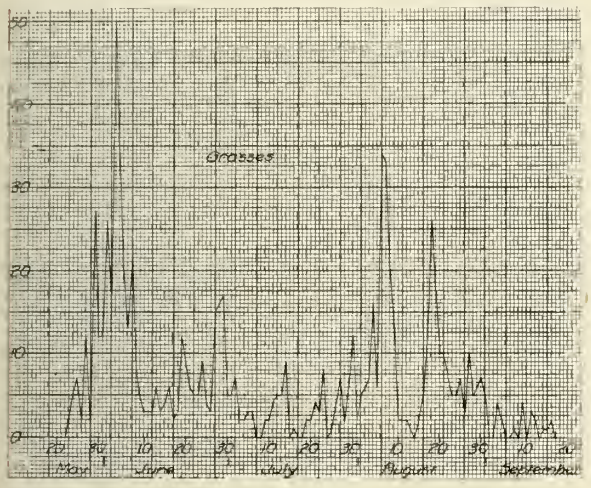


Fig. 2.

lots and the same grasses plus timothy and red top are found in the surrounding country. Among the fall weeds ragweed is the most numerous both in town and country. I have the impression that short ragweed is more abundant, especially in town, than the giant variety. Lamb's quarter grows luxuriantly, in many places outnumbering ragweed. Examination of lamb's quarter plants during the pollinating season, however, shows that they produce relatively small amounts of pollen, an observation which is borne out by the low total chenopod count compared with the ragweed count. Pigweed (amaranthus retroflexus) also is a poor pollen producer, although the plants are numerous.

Of interest was the observation of hemp (cannabis sativa) in large quantities both in town and open country. Around Council Bluffs and Omaha, hemp is very abundant and since this weed is a large pollen producer it contributes not a little to the hay fever problem in that region. Both my field observations and my pollen counts suggest that hemp should be used routinely in central Iowa for skin testing and that its inclusion in treatment solutions should be considered with some patients.

Western water hemp (acnida tamariscina) is fairly abundant in the country around Ames. It is a good pollen producer and probably deserves more consideration among the amaranths than does pigweed, which is more likely to be used in skin testing. Kochia or Mexican firebush is seen growing wild and also cultivated. On several days a count of Kochia pollen grains as distinct from the rest of the chenopod group showed it present in appreciable quantities on exposed slides. This again may be a pollen which should be given consideration in cases of fall hay fever which have not responded favorably to routine treatment.

The accompanying charts show some of the individual pollen counts. Among the trees only maple, oak, and elm are given, since these pollens were most numerous. The count on elm pollen was amazingly high for a few days, higher than any single count secured on ragweed. It is possible that a slide exposed in a different part of the city would not show as high a count. The elm pollen season is brief and this probably accounts in part for the fact that one does not see many elm sensitive patients. Elm pollen may also lack antigenic potency.

Grass pollen was found on the slides from the last of May until the middle of September with the height of the season in early June and a second peak in August. Grass pollens never appear on the slides in very great numbers. This is due in part to the fact that the individual grains are heavier than are those of some of the weeds and are not carried as well in the air. The highest total grass count was only 50. Analyzing the results of the grass survey one is impressed with the fol-

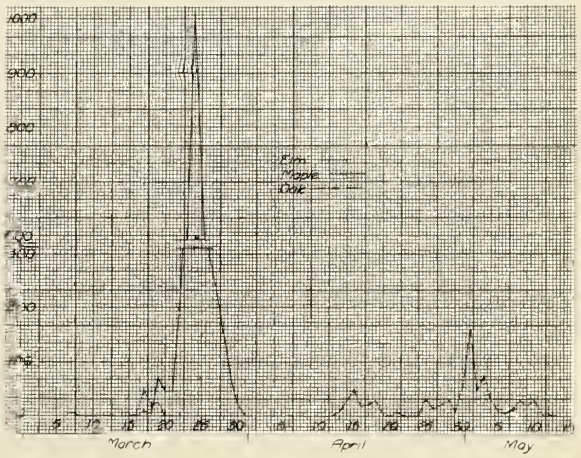


Fig. 3.

lowing facts; first, the grass season is not as definite as either the tree or weed season, (the counts on grass were as high in August as on many days in June and July); and second, grass pollen must be a powerful antigen to produce some of the severe cases which one sees with the relatively small amount of pollen in the air.

For the fall weeds, counts are given on ragweed (combined short and giant), hemp (cannabis sa-

tiva), and the combined chenopod-amaranth group (including lamb's quarter, pigweed, cocklebur, Mexican firebush and western water hemp).

Of interest were the large numbers of spores appearing on the slides throughout the summer and fall. No accurate count of these was made in 1938. In addition to alternaria and hormodendrum which have been reported in some surveys, there were quantities of spores of rust and smut which, of course, cannot be identified microscopically. One is impressed with the probability of the importance of these in this part of the country. Feinberg[11 and 12] and others in recent years have reported many cases of sensitivity to the fungus spores. Some of the patients with seasonal rhinitis formerly thought due to sensitivity to pollens, but getting poor results from pollen therapy, probably are cases of fungus sensitivity. Two patients were seen by the author in 1938 with marked symptoms during the oat threshing season who were sensitive to oat rust. There may be many more such.

SUMMARY

I. The results of a pollen survey in Ames during 1938 are given.

II. On the basis of the survey the following points seem worthy of attention:

A. The grass season continued much longer in the fall than we are accustomed to think it does. This has some bearing on the plan of treatment.

B. Hemp (cannabis sativa), western water hemp (acnida tamariscina), and Kochia seem more probable offenders than some of the fall pollens more commonly used for skin testing and treatment such as lamb's quarter, pigweed and cocklebur. However, ragweed is infinitely more important than any of these.

C. Central Iowa probably has many cases of fungus sensitivity.

The author wishes to acknowledge her indebtedness to Dr. John Martin and Dr. Ada Hayden of the Department of Botany, Iowa State College, for aid in identification and collection of field specimens, and to Mr. O. C. Durham of Abbott Laboratories for advice in the study of pollen structure.

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INTERNAL FIXATION OF INTRACAPSULAR FRACTURE WITHOUT INCISION

W. W. BOWEN, M.D., F.A.C.S., Fort Dodge

When I was a young practitioner and for some years thereafter, no one expected to get more than a fibrous union in any case of intracapsular fracture of the hip. Maxwell and Ruth of Keokuk devised a treatment consisting of continued extension and lateral traction which produced some osseous unions. Whitman in 1904 brought out his method of reduction by extreme abduction, partial flexion and internal rotation, which position was maintained for some months by a cast from the axilla to the toes. This was the accepted treatment for years, but it secured only fifty to sixty per cent of osseous unions. To the best of my knowledge, Murphy was the first to use internal fixation. He drove a square nail through the trochanter and through the line of fracture into the head. It did not work well, mainly because of the material from which the nail was made; it was ordinary steel and thus corroded. In 1931 Smith-Petersen brought out a flanged nail which he introduced by a tremendous operation. Subsequently Johansson of Gothenburg, Sweden, drilled a hole through the nail to admit the passage of a Kirschner wire through the hole. The wire was drilled into the head through the line of fracture and trochanter and the nail was threaded over it and driven home. King of Melbourne, Australia, did the same thing independently of Johansson. This method also requires an open operation. In 1937, Campbell of Memphis, devised a driver to fit over the same wire to drive it with. In addition, many gadgets have been devised to facilitate the introduction of the nail, and the use of the Smith-Petersen nail has become the most accepted treatment throughout the world.

Devices other than the nail have been used. For instance some employ a lag screw which has an arrangement at the point that can be spread after the screw is introduced. Henderson of Rochester uses a nail with a corkscrew on the inner end that

twists into the head and the nail is threaded on the outer end so that a nut can be screwed down to the bone. Moore employs three small wires threaded on the outer end. They are introduced through the line of fracture and small nuts are screwed down to the bone. All these operations require large open incisions.

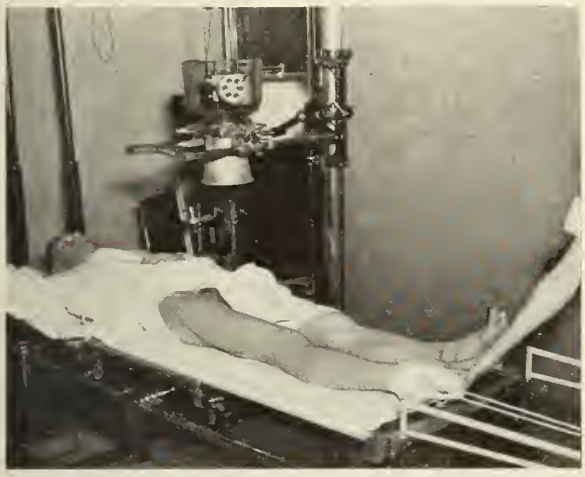


Fig. 1. Patient on the table, extension applied, foot inverted, which brings the plane of the neck of the femur level with the table. Shows line from anterior superior iliac spine to the pubic spine with a lead marker at its middle. This marker lies over the apex of the acetabulum. Second lead marker lies over the trochanter.

All treatments of the fracture of the neck of the femur have been associated with a high mortality rate, principally because of the age of the patients who sustain this injury. They are nearly all old people, and the final results are marred with a considerable number of failures. The failures are mostly nonunion or aseptic necrosis of the head, or both, but one can have a good osseous union and still have necrosis of the head. The causes of these poor results are several.

1. The patient is nearly always old, and often has no mind to speak of; he cannot cooperate well, and easily becomes a victim of concurrent disorders.

2. Disturbances of circulation are also responsible for some poor results. Wolcott of Des Moines has made a good study of the circulation in the head of the femur. He shows there are three sources of blood supply to the head; first, a small supply through the ligamentum teres; second, a small supply through the capsular ligament; and third, the main supply from a branch of the nutrient artery of the femur. He also shows that if the neck of the femur is fractured, especially near the head all the tiny vessels are cut off except that in the ligamentum teres, and that supply is at best very small. Sometimes even the ligamentum teres is broken, so there is not a vestige of blood supply to the head.

3. The neck is set off from the shaft of the femur at a sharp angle so that weight bearing is nearly at right angles to the line of fracture.

4. Some think that fragments of the capsule often get into the fracture, but I think this is a rare complication.

5. Bad apposition cannot produce a good result here and it is more important to get good apposition in this kind of fracture than in any other. Furthermore apposition must be maintained better here than in any other location. Healing of fractures anywhere else occurs from both sides of the line of fracture, but here, since there is no blood supply in the head, all healing must take place from the distal side.

TREATMENT

I have been using the following described method in treating fracture of the neck of the femur with success: when the patient is in good condition, he is taken at once to the x-ray table; if his condition is not good, he is put in bed with simple extension until his condition is better. This requires from one to several days. Both hips are x-rayed, and while the film (Bucky diaphragm) is being developed the anesthetic can be administered. I prefer a spinal anesthesia, about 60 milligrams of novocaine, but a local or general anesthesia may be used.



Fig. 2. All the instruments necessary to nail a hip, including a nailset large enough to cup over the nail head; a set of nails; a knife to puncture the skin; heavy steel pliers, and a metal hammer.

The patient is then fastened to the table. His shoulders are tied to the head of the table (Fig. 1), and an extension applied to the injured leg. I have an extension apparatus attached to the foot

of the x-ray table, but a hook in the wall at the foot of the table will serve the purpose. I use a block and tackle for the extension and it must be maintained throughout the operation. A line is then drawn from the anterior superior spine of



Fig. 3. Showing fracture with displacement.

the ileum to the spine of the pubis. In the middle of that line a lead marker is placed. It marks the apex of the acetabulum and consequently the apex of the head of the femur. The neck of the femur protrudes outward from the pelvis at right



Fig. 4. Extension and inversion applied. 1. Lead marker over acetabulum. 2. Lead marker on skin marking upper edge of the trochanter.

angles to that line, but is inclined backward about seventeen degrees. With the foot and leg rotated strongly inward (this inward rotation must be maintained throughout the operation) the plane of the neck is brought up to a level with the table. With these markings in mind, it would be possible to drive the upper nail without other landmarks, it being merely necessary to draw a line from the lead marker at right angles to the line and to the outer surface of the skin of the hip, and start the nail at that point and drive it straight to the lead marker, but I prefer a more accurate estimation. Another lead marker is placed on the outside of the hip at a level with the upper edge of the superior trochanter.

Another x-ray film is made to confirm perfect apposition. Johansson says that the maneuver necessary to attain apposition is extension and internal rotation, and I have always found this to be true. The capsule entirely surrounds the joint and neck and will not stretch. When it is tightened by extension and internal rotation the fragments are brought into apposition. If that does not occur, I would recommend either Whitman's method of reduction, which is described above, or Leadbetter's method, which is as follows: with

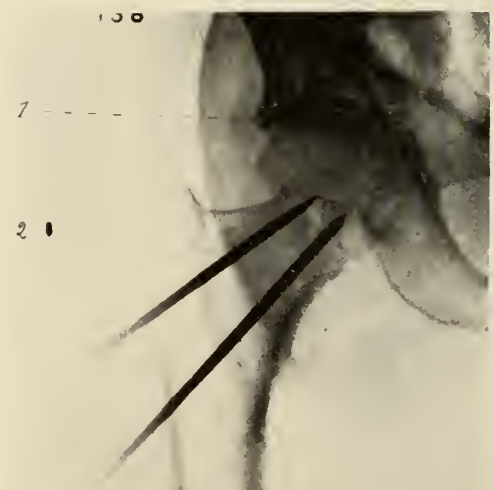


Fig. 5. Two nails started and driven so the heads are almost to the skin.

the patient lying on his back, the injured thigh is flexed to right angles; traction is made upward using the bend of the operator's elbow; the thigh is rotated inward and then circumducted outward and brought down to the table.

After the x-ray film has been examined to check the apposition, the length of nails to be used should be determined by holding different nails in front of but not touching the film. One should note the lead marker on the outside of the hip, the point below it where the upper nail must be started, and the point below that where the lower nail must be started. From this examination we learn three things: about the apposition, the desired length of the nails and the exact points in the skin where they must be inserted. The field of operation can be prepared while this examination is being made. To do this the lead marker on the outer side of the hip is removed and a tiny scratch is made to mark this site. When the antiseptic is applied the scratch will be evident.



Fig. 6. Two nails driven home.

The upper nail is inserted first. The point of insertion has already been determined by examining the film. It will be two and one-half to three inches below the site of the marker which has been removed. It will be at an angle of 45 degrees from the shaft of the femur and on a line drawn from the lead marker which was placed on a line from the anterior superior trochanter to the spine of the pubis, which marker is still in position. A puncture is made in the skin with a knife blade (Fig. 2) and the nail is pushed through the puncture with the hand to the femur. A little orientation will show where the femur is closest to the operator, and the nail should be inserted at that place and driven toward the marker mid-way between the anterior superior iliac spine and the spine of the pubis. The nail should be kept level with the table, and driven until its head is within one-half inch of the skin. The second nail should be started in the same way as the first, and two and one-half to three inches below it—that is toward the foot of the patient. It should be pointed to the same marker, at the same level with the table (Fig. 5), and driven until its head is within one-half inch of the skin. At this point another x-ray picture should be made to see whether the nails are going in the right direction. If one of them is not, another one should be inserted, but the incorrectly placed one should be left in the bone until this time because it furnishes a guide for the second attempt.

When the operator is certain, from x-ray pictures, that the nails are properly placed and going in the right direction, they may be driven home. The points of the nails should stop about the middle of the head of the femur (Fig. 6) and the heads of the nails should be not less than one-half inch beneath the skin; an inch is even better. It is not best to drive the head of the nail clear down to the bone because more difficulty is experienced in removing it. After the nails reach the skin, they must be driven the rest of the way with a nailset and that nailset must be large enough to cup over the head of the nail. One properly made may be obtained from the Zimmer Manufacturing Company.



Fig. 7. Method of making lateral film through the neck of the femur with an ordinary x-ray outfit.

In checking up the various stages of the operation with x-ray pictures, both anteroposterior and lateral films may be made. Ordinarily I only use the anteroposterior. A lateral film can be made

with an ordinary x-ray outfit (Fig. 7) by placing the film to the side of the hip and torso on the lame side, raising the sound leg so the thigh is at right angles to the torso, and directing the rays under the thigh and through the neck of the lame leg to the film. They will be very distorted as all lateral x-ray films through the neck of the femur are, but one can learn from them the necessary information about displacements of the fragments and the location of the nails.

Since the two nails are driven at different angles, they hold as if the fragments were dovetailed. The only dressing is a patch of gauze over the puncture. The patient sits up on a back rest from the start, and may leave the hospital in a few days. He may be allowed to sit in a chair after a week or two and use crutches after five or six weeks, but he must not bear any weight on the lame leg for four months. The nails are removed after five or six months.

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THE IMPORTANCE OF EARLY TREATMENT OF ACUTE ANTERIOR POLIOMYELITIS*

WILLIAM R. VAN DUZER, M.D., Casey

Before taking up the discussion of this subject I wish to correct or explain a few facts which I think are pertinent to this disease. A common belief among the laity, which is often corroborated by many medical men, is that infantile paralysis is a terrible disease, that so far the medical profession knows very little about it, and has very little to offer in the way of treatment. It is true that so far the medical profession is somewhat in doubt as to the manner of contagion and mode of infection of the virus from one patient to another, and until this is definitely determined the control of an epidemic will be somewhat difficult. However, in regard to the dreaded nature of the disease, several of the childhood diseases, such as measles, diphtheria, scarlet fever and tuberculosis, have a much higher mortality rate and leave more permanent crippling than anterior poliomyelitis has ever done. Moreover, the medical profession, during the last ten or fifteen years, has made rapid strides along the line of treatment.

It is generally believed that almost everyone at some time in his life has either had or been exposed to anterior poliomyelitis, and that a large percentage of these cases have not been diagnosed or recognized. However, of the recognized cases, statistics show that only about 25 per cent develop paralysis to a minor or extreme degree, and that of this 25 per cent, about twelve to fifteen per cent are left with a residual or permanent paralysis. This twelve or fifteen per cent constitutes the group to which we medical men today can offer a great deal in the way of treatment and reconstruction. Under favorable conditions we should be able to reduce this figure by one-half.

In discussing this subject I do not expect to tell you much that you do not already know. I will not burden you with any comments on the importance and manner of early diagnosis. This phase is well covered in Moore's recent article.[1] I would emphasize the importance of rest, and quote from another article, "After an early diagnosis, complete rest is so important that when these patients are disturbed or moved as little as possible, a majority in whom the disease has not progressed beyond the early stages escape paralysis entirely." This is the one important point to keep in mind, because it is natural for both relatives and the attending physicians to get "panicky" when poliomyelitis is suspected. They may move the patient long distances to a hospital or sanitarium, thus disturbing him with unnecessary examinations and serum treatments which only seem to aggravate the condition. I am willing to confess many of us make this mistake.

In order to understand why the recovery period is so prolonged and why protection and muscle training are so vitally important, it is necessary to understand the nature of the pathologic changes which the virus produces during the acute stage of the disease. We know the disease attacks the nerve cells in the anterior horn region of the spinal cord where the large motor nerve cells innervating the skeletal muscles of the limbs and extremeties are located. These nerve cells are attacked and many times destroyed by the virus, although some workers believe there may be degeneration of the nerves themselves. At the Children's Hospital in Baltimore, they have had muscle function return after seventeen years of paralysis, and they maintain that the muscle tissues must be kept active until the nerves regener-

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ate themselves. The sensory nerve cells are never seriously affected by the virus. Hypersensitivity of the sensory nerves may be present in the early stages, but it subsides rapidly. Nerve involvement may be divided into the following four types:

1. The nerve cells may be pressed upon by the edema or swelling and temporarily thrown out of activity.

2. The nerve cells may be subjected to a damaging local anemia due to blockage of the minute vessels which bring in their blood supply, or to small hemorrhages occurring in the surrounding tissues.

3. The nerve cells may be directly attacked but not destroyed. An injured nerve cell recovers slowly, and generally has suffered a degeneration of its long far flung nerve filament or axis cylinder which must grow again from the nerve cell out to its termination in the muscle, a distance sometimes as much as a meter.

4. The nerve cells may be attacked and killed, undergoing complete disintegration. Since nerve cells cannot reproduce or replace one another, as can specialized tissue, such cell death means permanent paralysis.

Therefore, under proper treatment, recovery of the motor nerve is to be expected in the first three types of lesions; rapid in the first group, less rapid in the second group, and very slow in the third group (three, five to ten years, depending on the age and care of the patient). Recovery can never be expected in the fourth group, and we can only hope for muscle coordination and muscle substitution. Since we cannot know which nerve cells will recover we must hope that all will, and we should take the necessary measures to assure as effective and widespread recovery as possible. This brings up the importance of muscle tissue as well as nerve tissue. When a muscle has lost its motor innervation it loses its muscle tone and tension, and is absolutely useless. Instead of being elastic it relaxes, stretches easily, and sags like a hammock between point of origin and insertion. With diminished blood supply the muscle fibers degenerate and atrophy, and in time are replaced by fibrous or fatty tissues, which cause the smaller limbs seen in poliomyelitis victims who have made a partial or larger degree of recovery. Therefore, the after-care is important, and while we cannot make nerve cells grow or hasten the growth of degenerated nerves, we can maintain receptive potentially sound muscles for the nerves to grow into, and develop the power as it returns to these weakened muscles.

As soon as the diagnosis is made, and there is indication of the slightest paralysis, frequent examinations should be avoided and the affected limb or part should be placed in a neutral position, supported by proper fitting splints or plaster casts which are easily removed so the parts may be bathed. Light massage should not be instituted for several weeks. The body should be in a supine position on a fairly hard mattress with a thin pillow under the head and shoulders. In cases of paralysis of the lower limbs a pillow should be placed under the knees with adequate support to the feet to prevent foot drop. The patient should spend part of each day lying on his stomach with the feet so arranged that there is no pressure on the toes.

After the acute stage has passed light massage should be started and this is a very vital and important period. If the massage is overdone, permanent damage will take place. Physiotherapy came into prominence about 1920. Innumerable electric devices were manufactured and used by reliable physicians and hospitals in the reconstruction period of poliomyelitis, to the detriment of the patient. Except for the infra-red light or heat lamp, electricity should never be used, and I believe this fact is now realized by all the leading hospitals and sanitariums today. I do think that tonic doses of galvanism following the rest period may have therapeutic possibilities; but the use of mechanical exercises and electric massage has done more harm than good. A weak muscle is easily fatigued and over-exercise results in hemorrhages within the muscle fiber which lead to rapid destruction and degeneration of the entire muscle. Muscle stretching must be avoided. This can easily take place when the patient is lying in bed or when the affected part is handled, and permanent damage may be done before the physician or patient realizes it. Protection against strain is accomplished by preventing a weak muscle from attempting to hold or lift any weight great enough to cause the muscle to weaken. Especially is this true of the arm muscles. Weak abductor muscles must have braces to support the weights of the arms. A muscle which has regained fifty per cent of its power may be built up if too great a strain is not placed upon it.

Authorities on poliomyelitis tell us that nursing and physiotherapy are undoubtedly the weak link in the after-care of these patients. A single lapse in the protection of the weaker group of muscles against over-stretching may retard the ultimate recovery of muscle function for months. Limbs should never be taken through the full arc of movement, since paralyzed muscles do not return to a normal or natural position after being overstretched. During this period of light massage we found it advisable to use peanut oil, since it was

nourishing to the skin and underlying tissues and was easily absorbed. The application of heat by infra-red rays or the large heat lamp aids the circulation which is greatly impaired.

Muscle exercise should be undertaken very gently, for short periods of time. The patient should be watched carefully for muscle reaction, because when the exercise period has been too prolonged or too frequent there will be a gradual weakening of the muscle power and a general enervation of the patient. Shortening the exercise time and lengthening the intervals between treatments result in gradual improvement. The exercises should be given in the morning after a good night's rest. The patient's clothing should be removed to avoid as much as possible any friction or impairment of movement of the limbs. The affected limbs should be supported in a neutral position by use of sand bags and pillows. Periods of exercise should be limited to two or three times a week. After the acute shock has subsided, accurate muscle testing at regular periods is essential to determine the type of protection as well as the amount of exercise necessary for continued improvement. Protection positions are determined by the relative balance or imbalance between muscle groups.

Exercises are graduated in amount and in difficulty, according to the strength of the individual muscle groups. Weak or paralyzed muscles should not be carried through a full range of motion, either passively by the examiner or physiotherapist, or actively by an apposing muscle which may be normal or affected only slightly. The first movements are done by permitting the patient to attempt only a minimum range of movement, twenty to thirty degrees, from the actual position. If this does not fatigue the muscles, resistance may be applied and a greater range may thus be attempted, but under no conditions must the muscle ever be stretched. After exercise treatments the retaining splints or braces should be applied to prevent deformity and afford protection of the weaker muscles. In the use of exercise it is wise to prevent substitution of muscles. Many muscles in the body act in combination with other muscles to perform certain movements. Normally they assist each other, and when one is very weak, another may attempt to perform the movement alone. Thus the weaker muscle is stretched, and as previously stated, this is detrimental and injurious. Many harmful substitutions may be avoided by changing the body position or type of exercise movements commonly given weak muscles.

The use of exercise under water has reached great prominence in the last ten years and this treatment, like all others, has its limitations. Bennett of the Children's Hospital in Baltimore, believes that if the principles of restricting the range of motion are observed there is little advantage to be gained in putting a new case in water; if they are not observed it is detrimental to permit stretching of the muscle through the full range of motion under water. The buoyancy of water relieves the weight, thereby lightening the strain, but it will not prevent the stretching of muscles. In the later stages or if an individual has considerable residual weakness and paralysis after the first year of bed rest and table exercise, and if the muscles can be effectively braced, some of these patients can be greatly benefited by generalized activity and exercise under water, or by walking with the aid of braces in the water. These exercises encourage the patient to help himself and tone up the system, promoting normal function and overcoming tendencies toward sluggishness and permanent invalidism.

Physicians and patients alike have been confused by the extensive and contradictory literature on this subject. We can only remember that each case is a law unto itself, and we cannot be dogmatic in our prognosis of any case. The outcome will depend upon the patience of the physician and the ability of the patient to carry out a prolonged period of treatment. Our duty, above all things, is to build up the morale of these patients, to make them realize that their impairment is not hopeless, but that the medical profession can offer them a great deal in rehabilitating them, so that they may take their places among normal individuals. In this connection special mention should be made of the Warm Springs Foundation of Georgia. The medical profession should give those in charge of this work their full share of credit; nowhere else can there be found any greater accomplishments in this respect.

In summing up the treatment of poliomyelitis we find the following four steps:

1. Early diagnosis with spinal puncture for diagnosis and to relieve the pressure.
2. Complete rest with the use of sedatives if necessary.
3. Proper fitting splints or casts to maintain the affected parts in a neutral position and to prevent muscle stretching.
4. Sufficient time for the nerve cells to return to normal and in many cases regenerate the nerve filaments, with the use of proper selected exercise, massage and physiotherapy according to the needs of the individual case.

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CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

Hospital Staff Meeting of March 21, 1939

TREATMENT OF NEOPLASMS OF THE KIDNEY

Nathaniel G. Alcock, M.D., Iowa City
Department of Urology

Neoplasms of the kidney can be conveniently divided for clinical purposes into those occurring during childhood and those occurring during adult life.

NEOPLASMS OF THE KIDNEY OF CHILDHOOD

These comprise about five per cent of all the neoplasms of the kidney and occur most frequently during the third year of life. A few do appear during the first and the fifth years but practically never after the age of seven. They grow very rapidly and to enormous size and usually recognition of a tumor mass is the first sign of the disease. This large, rapidly growing and symptomless tumor is usually discovered accidentally by the mother when she is handling the child. Its size and its rapid growth are so alarming that the child is taken immediately to the doctor. Since this is the most frequent solid abdominal tumor, as well as the most frequent malignancy to appear during childhood, there is little confusion as to the diagnosis, which is generally made early. These tumors metastasize most frequently to the lungs and more rarely to the bones of the torso and the retroperitoneal glands. The pulmonary metastases may occur very early in the course of the disease and in spite of the fact that the diagnosis is made comparatively early, 40 per cent of the children show evidence of chest involvement when they are first seen.

Treatment: The treatment in the past has been entirely surgical, namely nephrectomy, as soon as the diagnosis is made. The results have been 100 per cent bad. My own personal experience has been typical of that of other men. I have never had one of the children, whom I treated with nephrectomy alone, live more than two years. In fact, in going over a small series of these cases some years ago I found that the unoperated ones, the ones considered inoperable due to metastasis or the size of the tumor, lived, on an average, a few months longer than the treated ones. As far as I can determine from the literature the number of these little patients in this country who have been actually cured by operation alone can be counted on the fingers of one hand. For more than thirty years this has been the only treatment, and the 100 per cent failure would seem to indicate there is no use to attempt it any longer. With the advent of modern and more efficient deep x-ray treatment the picture has been changed considerably, but we still do not know just how much we are actually accomplishing.

Effect of the X-ray Upon the Primary Tumor: Usually with efficient deep x-ray therapy the primary tumor decreases in size very rapidly and becomes so small it cannot be palpated. In our series of cases there was an almost dramatic response of the primary tumor to this treatment in all except one patient. Furthermore, there is little tendency for the primary tumor to recur after x-ray therapy. However, even if the primary tumor does not regrow, metastasis may take place after this type of treatment.

Effect of X-ray Upon the Metastatic Lesions: In several of our patients who had x-ray evidence of pulmonary metastases, that evidence disappeared with deep x-ray therapy. Furthermore, in three cases when the pulmonary metastasis occurred a second time it also disappeared under x-ray therapy and we have had at least one case where it has disappeared for the third time.

It is too early to determine accurately just what our final results are going to be. We had one patient, receiving radiation and then operation, who lived four years before metastases appeared. However, death occurred four and one-half years after the first treatment was instituted. Another patient who had x-ray therapy alone lived over five years before evidence of metastasis appeared and he has just recently died, five and three-fourths years after the institution of treatment. Another patient with x-ray treatment alone is alive more than four years after the beginning of treatment, but she has metastasis and is doomed. There is no question but what x-ray therapy, whether by itself or combined with operation, has increased the duration of life of these patients. Whether or not it is going to bring us any cures is a question that cannot now be answered.

There is no comparative for the word "death" or "cure". A patient who dies of recurrent malignant disease six years after the institution of treatment is just as dead as the patient who dies six months after the beginning of treatment. Furthermore, a patient who has a recurrence of his malignant disease six years after the beginning of treatment is no more cured than the patient whose malignancy recurs three months after the first treatment. Therefore, if in the end we find that we are not curing any more than we were by surgical means alone we will have to admit

that our actual failure is just as complete with radiation as it was with operation. What, then does the increased life which these patients have really mean? It may mean that we are traveling along the right road. At least it gives us a glimmer of hope, but we must also acknowledge that the glimmer is not very brilliant.

NEOPLASMS OF THE ADULT KIDNEY

Neoplasms of the adult kidney can be divided into two classes: those that involve the substance of the kidney, and those that are confined to and involve only the pelvis of the kidney.

1. Neoplasms of the Substance of the Adult Kidney.

These neoplasms constitute the hypernephromas and the carcinomas. They practically never occur before the age of thirty and most frequently after the age of fifty. There is a period, then, between the ages of seven and thirty years, where malignancy of the kidney need not be taken into consideration in differential diagnosis. While these neoplasms are entirely different from those found in childhood the ultimate result and the outlook is not much better, if any. The diagnosis is not difficult but many of these neoplasms develop to full bloom and even produce metastasis before any signs are manifest. In a series of ninety consecutive cases of renal neoplasm investigated from one of our neighboring state university hospitals it was shown that forty-seven had metastases when admitted and in thirty-six of these the first symptom of the disease was produced by a metastatic lesion. When they do cause trouble the symptoms or findings are usually hematuria or the appearance of a tumor. Gross blood in the urine or the appearance of a large tumor mass in the abdomen is alarming to the patient and to the doctor and usually the diagnosis is made very soon after the first signs appear. Therefore, on the whole we can say that the diagnosis is made as early as it is possible to make it, and I doubt if we will gain anything by stressing the point of early diagnosis.

It would be fairly possible to make a diagnosis of this condition before any symptoms had appeared, but that would require more than just a physical examination. It would require a cystoscopic examination with retrograde pyelograms. In a community of 15,000 there are approximately 7,000 in the adult kidney tumor age, and in a community of that size I would estimate that about one of these neoplasms appears annually. In order to discover this one tumor early it would be necessary to cystoscope those 7,000 people twice a year. The expense of such a procedure including x-ray expense, hospital expense, loss of time, a moderate fee for the cystoscopist, etc., would amount to more than $450,000. This does not take into account the pain and suffering and the possibility of accidents, nor the fact that your chance of finding it is only a 50 per cent one. This would be an enormous amount of money expended in order to discover a very small tumor that 6,999 of these individuals did not have.

Treatment: The treatment has been purely surgical. One would expect good results from operation in malignancy of the kidney. The kidney has a good primary capsule and it is wrapped in a thick envelope of the fatty capsule. The neoplasm is almost invariably unilateral and the loss of one kidney does not seriously jeopardize the life or the health of the patient. The kidney including its fatty capsule lends itself very well to complete clean removal. Here you would expect operation to offer the best chance, but let us see what the results are. A fair average is something as follows. Of the patients operated upon there is an operative mortality of about ten per cent. About 80 per cent show recurrence before the end of the fifth year and five per cent after the fifth year, which leaves about five per cent for cures. When you take into consideration the fact that only about 60 to 75 per cent of the patients seen are operable it reduces the percentage of cures for the whole group down to 2.5 per cent.

The Effect of X-ray Therapy: Unlike its effect in the kidneys of childhood this therapy has very little effect upon decreasing the size of the tumor and only a small percentage of the cases show this slight change. We have been using deep x-ray therapy routinely as preoperative treatment for about eight years. It is too early and our series is too small to allow us to evaluate our results. However, we do know that approximately three times as many are now living past three years as formerly lived with operation alone, and it is quite possible that time will show that our actual cures with combined therapy are considerably higher than with operation alone. However, it is also very evident that we are very, very far from the solution of the problem. I feel too, that we should not expect as much from preoperative and postoperative x-ray therapy here as we may in the case of neoplasm of the kidney of childhood.

2. Neoplasms of the Pelvis of the Kidney.

These neoplasms are very similar to the ones found in the bladder. Fortunately the majority of them are of the papillary type, low grade malignancy without infiltration of the pelvic wall.

In such cases x-ray has practically no effect, and futhermore it is not necessary, since clean removal of the kidney should give actual curative results. On the other hand, if the tumor is of the more malignant type, the flat, infiltrating type, the outlook is just as bad as in the neoplasms of the kidney substance. On the whole, therefore, the outlook in this disease is extremely dreary and discouraging. It may be that we will, through improved and more efficient x-ray therapy, better the results. At first we were very much encouraged, but as we see more and more of the final and ultimate results, failures, we become more and more pessimistic and discouraged.

Discussion

Dr. H. P. Smith: The tumors of childhood (Wilms' tumors) are very interesting from the standpoint of histology, and from the standpoint of irradiation. Microscopically, we see epithelial elements and a background of what looks like sarcoma. The "sarcomatous" element is more sensitive than the epithelial portion, and one might hope for permanent relief, but experience seems to indicate that this is not to be expected. The hypernephroma group has several subdivisions based on histology alone. There is a solid type of tumor with nests of cells resembling the adrenal cortex. In another group, glandular structures are formed. In a very large group there is a mixture of the two. In fact the tumor, in one part, may resemble the solid cell type, and in another part be glandular. Apparently the two types are merely variants, the clinical course and resistance to irradiation being about the same in both.

Dr. H. D. Kerr: I might as well add my gloomy part to this. There is one point which Doctor Alcock did not emphasize sufficiently, and that is the question which has been considered a good deal by urologists and radiologists as to the real sequence of treating Wilms' tumors. As Dr. Smith has just pointed out, these tumors are composed of different types of cells so that irradiation will eliminate the background portion of the adenosarcoma but rarely touches the epithelial portions or other cellular portions which are more resistant. That means with our ordinary treatment, which is usually rather intensive, there is always a chance of leaving active cells in the shrunken residual tumor. There are people who have advocated treatment of these tumors entirely by irradiation. I cannot line myself with them for the reasons stated, for there are almost always residual resistant cells which cannot be eliminated by any treatment instituted. We are always confronted with the possibility that a fair percentage of the gross tumor is of the resistant type. Therefore, when the size of the tumor has been decreased as much as possible, after it has been treated for a matter of a few weeks until the tumor shrinks, then it should be removed. If a tumor which has malignant cells is removed, those cells will not cause recurrences. This does not mean there are no viable cells outside the operable field which will later return and metastasize, but it seems to me entirely logical that when the size of this very malignant tumor is reduced to a minimum, one should get rid of it. Dr. Alcock has mentioned several cases we have treated; one was of a patient who lived five years or a little longer on irradiation alone. This was not our choice. The parents refused to let us operate, and the patient died Saturday. He came back after five years with complete freedom from his tumor, but later returned with metastases to the retroperitoneal nodes. We could only reduce his pain. In the other patient who last month had lived five years, there are local recurrences and metastases to retroperitoneal nodes as well as to the lungs.

Dr. Alcock feels we should continue treating these patients whether they show symptoms or not. We did just that in the second patient, whose demise we expect almost any time, until there was a board-like induration over the kidney area from front to back. She developed bowel hemorrhage which persisted for weeks. At one time, as evidenced by barium enema, it seemed that there might have been actual neoplastic invasion of the colon. The fact that she lived three more years afterward indicated a mistaken impression. However, we cannot treat these patients without regard to the skin. We had a patient with a testicular tumor, who because of its metastases to the kidney, received a great deal of treatment. Now he has such a hard abdomen it is impossible to tell whether or not he has a recurrence.

Perhaps if when we first began treating the patients, we did not feel it was necessary to reduce the mass to an irreducible minimum, we could treat them more often. It is true that in some clinics, they will give a third of what we do and then repeat it. In the treatment of malignant tumors, either they are destroyed the first time or not at all. That is almost always true. It is not true of superficial lesions, but I am convinced it is true of deep seated lesions. If after everything possible has been done, one repeats the treatment, the results are generally more harmful than beneficial; so I think we must temper Dr. Alcock's enthusiasm for irradiation. I think it has its place but it is limited. Repeated irradiation of these patients is not possible.

When it comes to treating the adult type of kidney tumor, I think we may be getting along a little better. I recently went over case reports of fifty patients who have been irradiated since 1930. Thirteen are still alive; five after four years; eight after two or more years. Dr. Alcock told you how many cases would have recurrences after two, three and five years, and what the ultimate "cure" rate would be. Perhaps after we wait a few more years we will find that we have done nothing more than before. Our impression is very definite, however, that these patients are doing better than those who did not receive irradiation. Most of these tumors in adults do not show change after intensive irradia-

tion. I mean *intensive irradiation*, so much that the patient develops an intense reaction and an open sore.

The whole outlook is not encouraging. I am not quite as discouraged as Dr. Alcock, although it would seem that increased irradiation will not be possible unless we can find some way of making the patient's hide tougher. People are not going to thank us if they are cured of tumors but must go around with skin ulcers. We have several patients with ulcers from Dr. Plass' department whose tumors have been arrested ten or twelve years. The answer is not to be found in higher voltages than we use.

Dr. E. D. Plass: It is unfortunate that these kidney tumors respond so poorly to any form of treatment. At the same time I feel confident you will agree that just because these tumors metastasize before there are any symptoms does not in itself constitute a good reason why we should not insist to the laity that hematuria is a matter which should be given serious consideration. There are only two facts involved in improving the control of cancer; perfecting the technical means of treatment and getting the tumor at an early date. I have been concerned with both phases of the problem, and believe they should be coordinated. I agree with the statement that we should not talk about curing cancer. In the *Iowa Cancer Manual* emphasis was placed upon five year "control". The word "cure" was avoided because it is obviously impossible to say when a cure is attained. Most of us will agree that prolonging a man's life four or five years is worth something to the man and something to the country economically.

Dr. R. Nomland: What is the incidence of Wilms' tumor in newborn infants?

Dr. Alcock: I think the incidence is about one in ten thousand. I have one other point to bring up in this connection. I almost never think in terms of a "cure" of carcinoma of the prostate gland and the bladder, particularly those of the infiltrating type. Two or three weeks ago I heard a fellow over the radio telling people that with early diagnosis there would be 50 per cent more cures. I could not help but think of these tumors of the kidney which we have seen here, and I thought to myself I would like to see him get a 50 per cent cure during the early stages in those cases of malignancies of the urinary tract.

The kidney has a complete capsule. These tumors are practically never bilateral. The kidney lends itself to complete removal. The life of the patient is not jeopardized by the loss of one kidney. The kidney lends itself to surgical treatment as readily as the testicle, but despite these favorable conditions the results of treatment of malignancies of the kidney are almost as bad as the results of treatment of malignancies of the testicle. Certainly it is not a case of early diagnosis. It is a question of finding some treatment we are not using today. Thirty years of surgical experience with tumors of childhood have demonstrated there is no cure by this means. There is no reason for continuing with it and if x-ray therapy cannot effect a cure, we must look elsewhere. The problem of treating malignancies is far from being solved.

THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

CARCINOMA OF THE LUNG

A CASE WHICH MIGHT HAVE BEEN MISTAKEN FOR ENDOTHELIOMA OF THE PLEURA

D. W. LEIK, M.D., Dubuque

In recent years much doubt has been expressed in regard to the occurrence of primary carcinoma (endothelioma) of the pleura. The majority of pathologists agree with the views of Robertson who believes these tumors are secondary to tumors arising elsewhere in the body, most frequently in the lung. Clinically the case was typical of the so-called endothelioma of the pleura, and except for the autopsy findings would have been so classified.

CASE REPORT

The patient was a Polish, white man eighty years of age, who since January, 1938, had noticed fatigue on exertion, loss of appetite, weight and strength. Throughout the summer of 1938 he experienced dyspnea; at other times he had difficulty in taking a deep breath. There had been no swelling of the ankles, heart consciousness, cough or expectoration. He was able to lie flat in bed at night. In October, 1938, he began to complain of pain in the upper right abdominal quadrant and to a lesser extent in the lower right chest following rather closely the lower ribs, beginning posteriorly and coming around to the midline in front. This pain was paroxysmal, unrelated to position, exertion, or the taking of food. He had noticed belching after eating and progressive distaste for food. There had been no jaundice and his usual constipation showed little change. He denied ever feeling feverish, having night sweats, or of having had an acute illness suggestive of pneumonia, bronchitis, or influenza. There was no pain at the right shoulder or into the arm.

Family History: Largely unknown.

Past Medical History: He recalled no illnesses except measles which he had at fifty years of age.

Physical Examination: When first seen in November, 1938, the patient was a tall, emaciated, weak, white man eighty years of age. The mucous

membranes were of normal color and there was no jaundice. The teeth had been removed. The lower half of the right chest expanded poorly and presented wooden dulness and poor transmission of breath and voice sounds. The heart was not shifted and was of normal rate and rhythm. The blood pressure was 134/80. The radial arteries were hard and beaded. The abdomen was held rather tensely and was flat. There was definite tenderness and a mass in the upper right quadrant extending several finger breadths below the right costal margin. This was thought to be the liver. There was a left inguinal hernia. No glands were palpable. The temperature and respirations were normal.

Laboratory Examination: The red blood count was 4,100,000; the white blood count, 5,000; hemoglobin, 70 per cent (Sahli); the urine was normal; and a tuberculin test gave a negative reaction. Paracentesis of the chest revealed two liters of amber, thin fluid and a specific gravity of 1.014. There were a few pus cells present, but no organisms or tumor cells.

X-ray Examination: The chest films after paracentesis showed that there was still some fluid present in the right pleural cavity. Slight displacement of the heart was also evident. (Fig. 1.)

Progress: The patient was temporarily benefited by four pleural punctures which secured one to three liters of fluid each time. After the first puncture the fluid was streaked with blood, but it was felt that this might have come from the chest wall. The patient gradually became weaker and opiates were necessary for the pain which continued in the same location. There was a gradual but steady decline and death occurred on February 13, 1939, approximately fourteen months after the onset of symptoms.

Final Clinical Diagnosis: Probable carcinoma of the pleura.

Autopsy Abstract: The right pleural cavity contained blood-streaked fluid and there was only slight displacement of the mediastinum and heart. The parietal pleura was greatly thickened by hard silvery-gray plaques resembling old organized exudate. The right lung was atelectatic and only the size of a small fist. There were two heavy bands of hard tissue two centimeters in diameter extending from the lung to the parietal pleura. On section the pleura over the chest wall, diaphragm and lung varied between one-fourth and one-half of a centimeter in thickness. It was composed of firm, silvery-gray translucent tissue. The left lung showed only acute congestion and edema. The comparative size and external appearance of the two lungs are seen in Figure 2. On section a firm nodule was found in the upper lobe of the lung. (Fig. 3). Bronchi led into this area and seemed to fuse with the mass. The liver was of normal size, but its lower border was depressed ten centimeters below the right costal margin. The main arteries showed a marked degree of arteriosclerotic thickening and ulceration and all of the viscera showed resultant changes. There was no lymph gland enlargement. Microscopic studies showed the pleural thickening to be



Fig. 1. Roentgenogram showing fluid in right chest but slight displacement of the heart shadow.



Fig. 2. External appearance of the lungs. The marked area is shown in Figure 3.

due to large and small masses of richly staining epithelial cells sweeping through a moderate connective tissue stroma. The cells were columnar in type and frequently formed layers or gland-like structures. Mitotic figures were numerous. The sections of the mass noted in the right lung showed it to be composed almost entirely of similar cells which were strikingly like those of the bronchial epithelium. In some sections, masses of the neoplastic cells were seen in the peribronchial lymphatics.

Anatomic Diagnosis: Primary. Bronchogenic carcinoma of the right lung; extension to the visceral and parietal pleurae; right pleural effusion; emaciation. Subsidiary: Arteriosclerosis.



Fig. 3. Area of the right lung with primary tumor which extends to the pleura.

Comment: This was a case of an elderly man without cardiac disease who complained of irregular attacks of dyspnea, pain in his right chest and gradually increasing weakness. The transudate in the right chest recurred rapidly after removal, but there was only slight displacement of the mediastinum and heart. The history is fairly typical of lung cancer which should be suspected in all cases of unilateral pleural effusion without evidences of heart disease. The necropsy showed the neoplastic change in the pleural cavity to be secondary to primary cancer of the lung.

DISCUSSION

In the past fifteen years primary carcinoma of the lung has received increasing attention. Articles on the subject which formerly appeared only rarely, are now prefaced with embarrassed excuses for overburdening an extensive literature. In 1937 the New York State Institute for the Study of Malignant Diseases reported that carcinoma of the bronchus was noted with half the frequency of carcinoma of the stomach and that ten per cent metastasized to the pleura.[1] At Cook County Hospital 135 cases were studied in four years. In 74 necropsy cases, 45 per cent had metastasized to the pleura.[2] Cancer of the pleura has a history of recognition which has been even slower and more confused than cancer of the lung. In a masterly and exhaustive treatise, Robertson[3] in 1925 showed the confusion in regard to cancer of the pleura. With 182 references in many languages, he demonstrated that primary cancer of the pleura is very rare and that for practical purposes, only sarcomas exist. Until this time the teaching in many medical schools was that the primary tumor of the pleura, termed endothelioma, was common. Robertson analyzed the many reports of this tumor and proved that in most cases a primary tumor existed in some other part of the body. Many of these were really carcinoma of the lung; the primary growth was mentioned in the report, but in the discussion it was not connected with the pleural growth. Robertson's paper would seem to urge more caution in reports of pleural "endothelioma". However, in 1932 the title "endothelioma" appeared again without even a description of the microscopic arrangement of the tumor.[4] In 1934 an "endothelioma" was diagnosed when the cells had an adenocarcinomatous appearance.[5] Klemperer and Rabin in 1931[6] made a very complete study of primary pleural tumors. They reported four of sarcomatous structure that arose from the subpleural areolar tissue (mesenchyma). They agreed with Robertson that the majority of diffuse pleural tumors were metastatic, but described one case of their own and several in the literature which seemed to arise from the surface lining cells of the pleura. Since these are developed from the celomic epithelium which in turn is developed from a splitting of the mesoderm they proposed the term "mesotheolioma". Their careful work must be recognized, but the fact remains that primary pleural tumors are rare.

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State Department of Health

Walter Dierring

Pneumonia Case Reports in Iowa

Typing Centers Report Pneumococcus Findings

The April number of the Journal, page 170, presents figures showing the remarkable improvement in reporting of pneumococcic pneumonia during the first quarter of 1939 as compared with the same period in 1938 and 1937. Credit for more complete notification of cases is due in large measure to the cooperation of the many typing centers in forwarding individual reports as well as month by month summaries of laboratory findings, to the State Department of Health.

The accompanying table (Table I) contains figures showing the relative frequency of the various types of pneumococci, as reported to the Iowa State Department of Health during the first quarter of 1939. Reports were received from 27 typing centers in hospital and other laboratories for the month of January, from 47 typing stations in February and from 36 in March. The percentage frequency of occurrence of the different pneumococcus types and the percentage of total specimens (860) showing presence or absence of the pneumococcus are presented in the following bar diagram (Fig. 1):

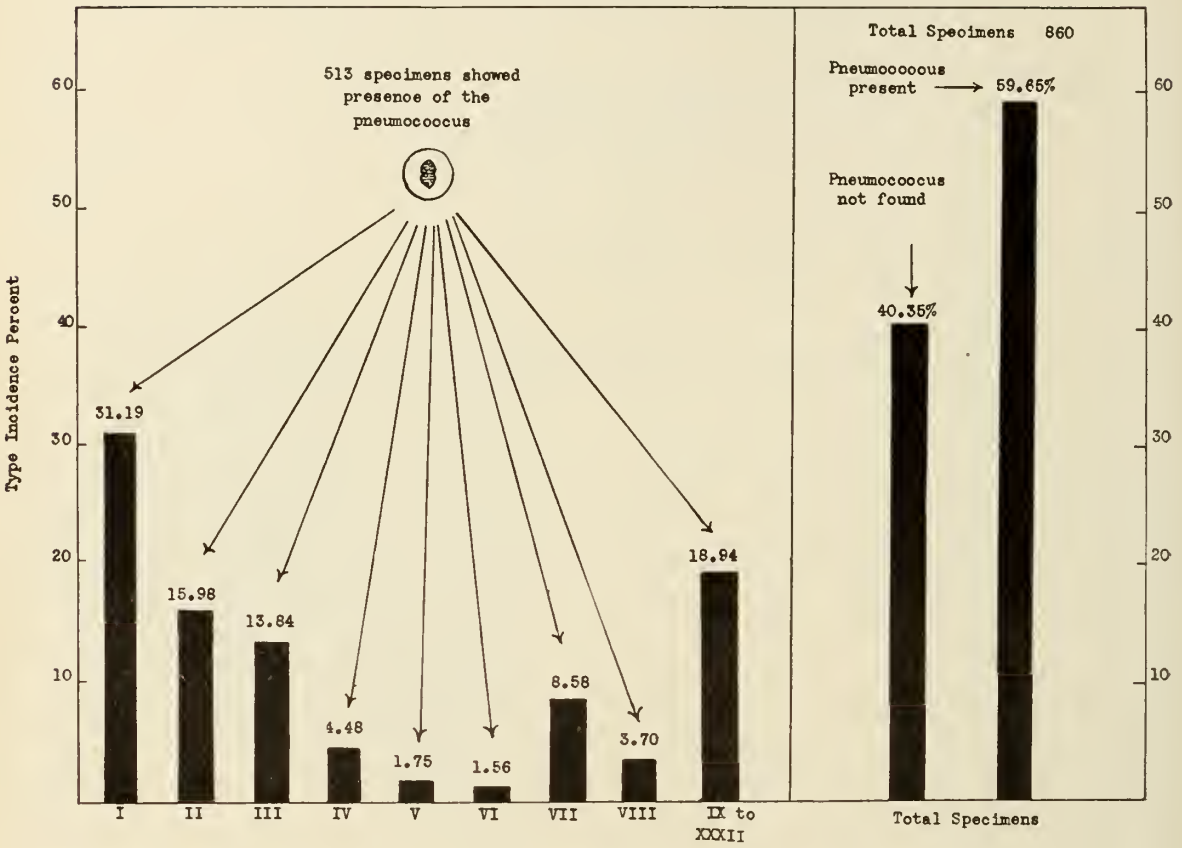
TABLE I

PNEUMOCOCCUS TYPE INCIDENCE IN IOWA

Based on Reports Received from Typing Centers in January, February and March, 1939

Type	January	February	March	Quarterly Number	Total Per cent	Type	January	February	March	Quarterly Number	Total Per cent
1	54	37	69	160	31.19	20	1	2	1	4	0.78
2	32	18	32	82	15.98	21	0	0	0	0	0.00
3	28	18	25	71	13.84	22	4	2	0	6	1.17
4	9	6	8	23	4.48	23	0	1	0	1	0.20
5	5	1	3	9	1.75	24	1	0	0	1	0.20
6	2	4	2	8	1.56	25	0	0	4	4	0.78
7	14	12	18	44	8.58	26			(Same as Type 6)		
8	5	8	6	19	3.70	27	0	0	2	2	0.39
9	2	2	5	9	1.75	28	0	2	0	2	0.39
10	4	3	2	9	1.75	29	1	1	0	2	0.39
11	0	3	1	4	0.78	30			(Same as Type 15)		
12	0	1	3	4	0.78	31	0	0	0	0	0.00
13	1	1	2	4	0.78	32	1	0	1	2	0.39
14	5	3	0	8	1.56	1 & 2	1	0	0	1	0.20
15	1	1	0	2	0.39	2 & 22	1	0	0	1	0.20
16	1	0	0	1	0.20	3 & 29	1	0	0	1	0.20
17	0	2	3	5	0.97	2, 17 & 22	0	0	1	1	0.20
18	2	3	2	7	1.36	3, 8, 9 & 10	0	0	1	1	0.20
19	7	2	5	14	2.73	19 & 29	0	0	1	1	0.20
Total of Various Types of Pneumococcus							183	133	197	513	100.0
Specimens not showing pneumococcus							94	89	164	347	40.35
Specimens showing pneumococcus							183	133	197	513	59.65
Total specimens examined							277	222	361	860	100.0

Figure 1.
PNEUMOCOCCUS TYPE INCIDENCE IN IOWA
Based on reports received from Typing Centers in January, February and March, 1939.



Pneumonia Mortality Attending Sero- and Chemotherapy

Study has recently been made of 472 pneumonia case records, completed by attending physicians and hospital workers and returned to the Iowa State Department of Health during 1938 and the first three months of 1939. The accompanying bar diagram (Fig. 2) compares the percentage mortality of pneumococcic pneumonia (all types) attending serotherapy, serochemotherapy and chemotherapy. It will be noted that the relatively low mortality (15.5 per cent) following the use of type specific antipneumococcic serum represents a comparatively large series of records (413 cases; 64 deaths). The percentage mortality associated with the combined use of serum plus sulfanilamide or sulfapyridine and with chemotherapy alone (21 cases; 5 deaths), is based on a much smaller series of case reports.

NOTICE TO PHYSICIANS

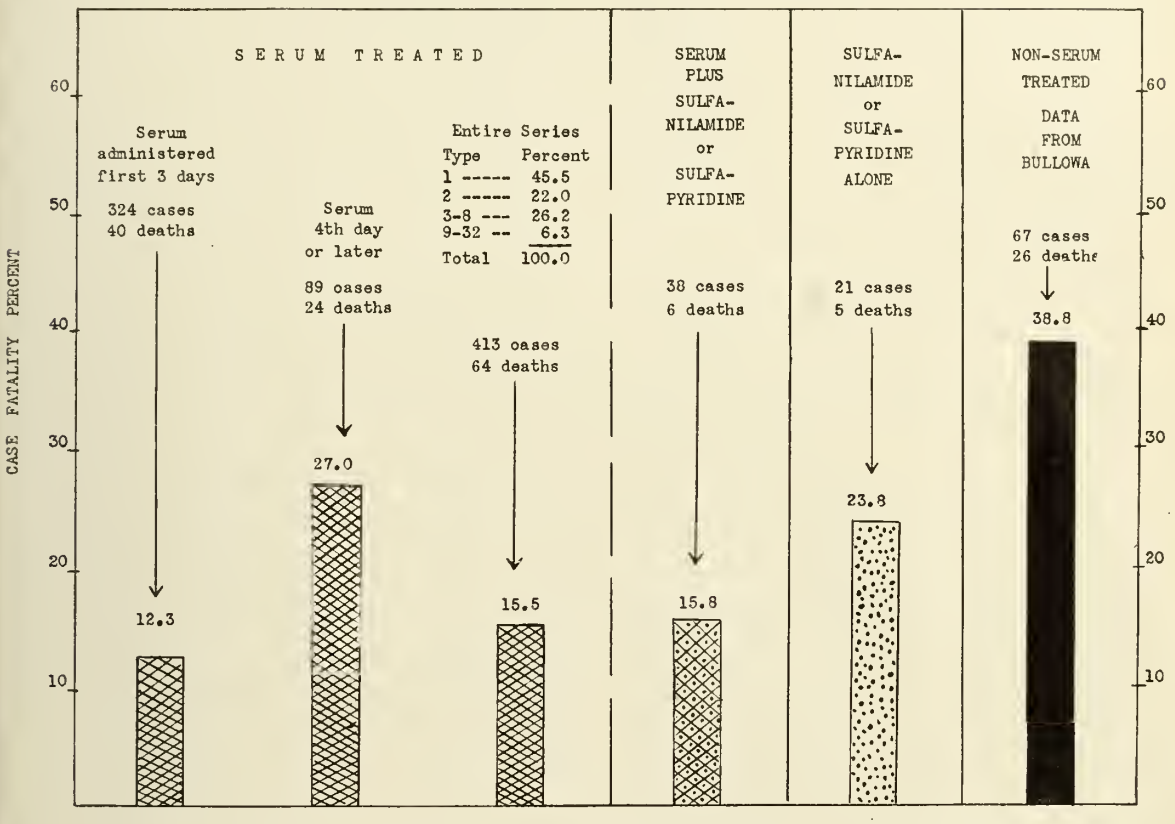
Type Pneumonia Before Treating

I. H. BORTS, M.D., Iowa City
Associate Director
State Hygienic Laboratory

During the past few months several inquiries have come from technicians regarding specimens from pneumonia patients that failed to type by the Neufeld method. In the State Hygienic Laboratory, likewise, we have encountered considerable difficulty on several occasions and have failed to type specimens of sputum and spinal fluid on direct examination, even though typical pneumococci were found in the freshly stained smears. However, on mouse inoculation, the peritoneal exudate after twelve to twenty-four hours contained pneumococci which gave specific type reactions, although of a somewhat delayed type. In one in-

Figure 2.
PNEUMOCOCCUS PNEUMONIA MORTALITY IN IOWA

Showing case fatality per cent with serum therapy, chemotherapy and non-serum treated cases—based on 472 case records—1938-39 (first three months).



stance specific typing was not secured until a second mouse was inoculated with the first mouse peritoneal exudate. In each of the instances mentioned, sulfanilamide or sulfapyridine had been administered a varying number of hours prior to taking the specimens.

Our findings seem to bear out those of Laurence* who reports that the effect of sulfapyridine is, first, the loss of type specificity of the pneumococcus, followed by complete decapsulation of the organism and finally loss of virulence. This process is reversible in that by repeated mouse passage, the microörganisms first increase in virulence, then capsules appear and lastly the type specificity is regained.

These difficulties in typing can be removed by withholding drugs such as sulfapyridine until the specimen has been secured and the specific type determined. Every effort should be made to acquaint physicians with these facts.

*Laurence, E. A.: Type III pneumonia; effect of para aminobenzenesulfonamide-pyridine in treatment. New York State Jour. Med., xxxix:22 (January 1) 1939.

PREVALENCE OF DISEASE

	Mar. '39	Feb. '39	Mar. '38	Most Cases Reported From
Diphtheria	24	29	17	Black Hawk
Scarlet Fever	650	595	1144	Polk, Black Hawk, Scott
Typhoid Fever	2	3	4	Marshall, Polk
Smallpox	125	180	171	Marshall, Decatur
Measles	815	687	678	(For State)
Whooping Cough	52	86	115	Woodbury, Scott
Cerebrospinal Meningitis	1	1	6	Polk
Chickenpox	375	446	455	Dubuque, Woodbury, Cedar
Mumps	223	234	126	(For State)
Influenza	2664	549	43	(For State)
Poliomyelitis	0	0	2	(For State)
Tuberculosis (Pulmonary)	85	56	57	(For State)
Undulant Fever	4	6	14	(For State)
Gonorrhea	121	106	191	(For State)
Syphilis	256	222	404	(For State)

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AMERICAN MEDICAL ASSOCIATION MEETS IN ST. LOUIS

All eyes in the medical world are focused upon the approaching days of May 15 to 20, when the American Medical Association convenes for its Ninetieth Annual Session at St. Louis. This greatest of all medical conventions may be expected to succeed to a new attendance record this year, due to the central location of the meeting place. More than 8,000 Association members will gather from all parts of the country to hear reports on the advances which have been made in medical knowledge during the past year. Some idea of the gigantic proportions of the postgraduate educational program which has been arranged is conveyed by noting that in the scientific exhibit, some 240 small "classrooms" will be constantly in session. They will simultaneously be presided over by more than five hundred of the leading investigators, teachers and practitioners in the rôle of a "faculty" who will demonstrate the respective exhibits.

During the five day session approximately 300 papers will be delivered before the sixteen scientific sectional meetings. Prominent among the subjects listed for presentation are sulfanilamide and the related chemical, sulfapyridine, compounds which have created great professional interest because of their potential widespread therapeutic possibilities. The section on pathology and physiology will devote its entire morning session to a symposium on these drugs, and sulfapyridine will be considered in a panel discussion of pneumonia in the section on pediatrics, while speakers in other sections will warn of its complications and effects which may arise from inaccurate or inadequate dosage. The vitamins also receive special attention among the subjects on the program. At least three papers, two in the medical section and one in the surgical section, deal with the part played by Vitamin K in the control of hemorrhage in obstructive jaundice. The section on pathology and physiology devotes a symposium to Vitamin B deficiency, while treatment with preparations containing Vitamins A, C and D will be presented in two papers in the section on pharmacology and therapeutics. Endocrinology, cancer, appendicitis and many other subjects of vital interest to the practitioner will be discussed in the various sectional meetings.

Altogether the addresses, the scientific exhibits, and the technical exhibits, constitute a remarkable demonstration of what modern American medicine has accomplished and is accomplishing for the protection and promotion of the health of the American people. When one considers that, with the exception of the technical exhibits, the laborious task of preparation has been carried out with no thought of individual monetary profit, but solely in the altruistic spirit of sharing with their fellowmen knowledge gained through personal initiative, one may well have faith in the ability of the medical profession as a private organization to maintain a standard of medical practice for the citizens of this country superior to that which could be obtained under any other system.

RESUMÉ OF THE ANNUAL MEETING

The 1939 session of the Iowa State Medical Society is now a matter of history, and it may be recorded as an historical fact that this year's meeting was eminently successful in all of its varied activities from the opening day of golf competition to the final address on Thursday by the very able president of the American Medical Association, Dr. Irvin Abell. Even the weather, which is not always so thoughtful of the comfort of Iowans in the month of April, was propitious.

The attendance, although not as large as last year's in the number of physicians registered, was close enough to our record to be satisfactory. There were 779 members of the State Society present, 68 guest physicians, thirteen registered nurses, 76 exhibitors, and 123 members of the Woman's Auxiliary, making a total of 1,059.

The scientific program seemed to meet with general approval, if one may judge from the near capacity audiences which were present in all of the sessions to listen to the presentation of papers. Many expressions of enthusiasm came to one's ears over the addresses of our guest speakers.

The Journal feels it appropriate to express in these columns the appreciation of our Society to those men who traveled so many miles to participate in the program. The general range of subject material, covering as it did many of the recent advances in medicine, well fulfilled the purposes of a state meeting, which is to offer a postgraduate course so that its members may have the opportunity of keeping abreast with the latest in scientific medical achievements. This purpose will be further accomplished in the coming months as the addresses of the speakers are carried in the pages of the Journal, so that those of our members who were unable to be present may read them, and those who were present, may study them at their leisure.

The Hobby Show, although containing fewer entries than last year, was very interesting, and a record of those attending it should provide a list of entrants for next year's show.

The scientific exhibits were especially outstanding this year. The Iowa X-Ray Club displayed many interesting films; the Fracture Committee presented films and charts, and models for those who were interested in the treatment of fractures; and individual exhibitors showed many unusual and instructive exhibits. The moving picture theater, in which were shown scientific films, was well attended, and by request was opened on Thursday morning for a repeat showing of obstetric films.

The transactions of the House of Delegates will be printed, as usual, in the July issue of the Journal. However, mention should be made of two actions of the House which merit the attention of the general membership. The first concerned acceptance of that portion of the report of the Medical Economics Committee dealing with the Farm Security Administration program. This program was formulated by the Medical Economics Committee for Farm Security Administration clients, and was to provide medical care under a group payment plan. Objection was made to the proposal on the ground that the rendering of medical services to this group at a cut fee would result in a demand for similar fees for other groups. The Editor has no desire to discuss the pros and cons of the situation. The program was outlined in detail in the April Journal in an editorial from the Medical Economics Committee, and those interested may refer to that discussion. Suffice it to say, the House of Delegates voted to reject that part of the report of the Medical Economics Committee.

Another item of interest was the resolution regarding the Wagner Bill. The decision of the House of Delegates was that the bill as written would not benefit the public interests, either from the standpoint of economics or that of health, and it was resolved to ask the Congressmen from Iowa to obtain modification of the bill in accordance with the previously declared policies of the American Medical Association and the Iowa State Medical Society, or if that effort failed, to ask them to defeat the bill.

Dr. Irvin Abell closed the general session addresses with an excellent discussion of the National Health Program, in which he pointed out its good features and asked that they be retained; while the undesirable ones should be eliminated. Those who attended this session must have been proud of their Society's annual program, and those who shared in the responsibility of preparing such a worthwhile program should be complimented on the obvious success of their efforts.

THE PELLAGRA-PREVENTIVE FACTOR IN VITAMIN B

In an attempt to elucidate the various fractions that compose the Vitamin B complex, previous articles in the Journal have discussed thiamin chloride and riboflavin. A consideration of the fractions of the complex concerned with the prevention and the treatment of pellagra is the purpose of this article.

It has been conclusively demonstrated that neither thiamin or riboflavin is the pellagra-preventive vitamin. The fraction of the Vitamin B complex present in autoclaved yeast, which Goldberger and Tanner found would both prevent and cure pellagra in man and black tongue in dogs, has been called the P-P or pellagra-preventive factor. Vitamin B_6 or the rat Antidermatitis factor is distinct from the P-P vitamin, and what has been called rat pellagra is due to a deficiency of riboflavin and Vitamin B_6. The filtrate factor, or chick pellagra factor, is likewise considered distinct from the P-P factor. The work of Goldberger and his associates demonstrated that pellagra in man and black tongue in dogs are analogous diseases, and that the P-P factor will prevent and cure these two diseases. Long clinical experience in the treatment of pellagra by a diet rich in the factor and by the addition of large doses of yeast, has placed this malady definitely in the category of specific deficiency diseases.

Elvehjem in 1937 reported that nicotinic acid would cure black tongue in dogs, and he suggested that it be employed in clinical pellagra. Spies and others have noted a marked clinical improvement of the symptoms of pellagra after the daily administration of 500 milligrams of nicotinic acid.

It was concluded, therefore, that nicotinic acid is either the pellagra-preventive vitamin or a provitamin, or that it is one of two or more substances necessary for the prevention of the symptoms of pellagra.

To complicate the picture even more, Day and Langston have recently demonstrated that the addition of nicotinic acid to a pellagra deficiency diet in rhesus monkeys, is without any effect. A combination of nicotinic acid, riboflavin and thiamin when added to the diet was likewise without appreciable effect. If, however, the deficiency diet is supplemented by 10 milligrams of dried brewers' yeast, or by two grams of liver extract, a normal growth and a normal blood picture are maintained. It is concluded from this experience that rhesus monkeys require some factor present in yeast or in liver extract in addition to the factors commonly considered as part of the Vitamin B complex.

The possibility that the P-P factor and the extrinsic anti-pernicious anemia factor may be related substances, has occasioned considerable study. Strauss and Castle obtained a response in pernicious anemia with an incubated mixture of gastric juice and autolyzed yeast. The evidence indicates that the extrinsic factor is not identical with the vitamin, but the possible relationship is a fertile field for study. In the rapidly changing knowledge of the vitamins and from the maze of confusing facts, it may be concluded that nicotinic acid is probably the pellagra-preventive vitamin, but that there are probably more fractions concerned in the etiology of this clinical state.

The components of the Vitamin B complex which have been described are nine in number. Of these, thiamin or Vitamin B_1, prevents beriberi and polyneuritis; riboflavin is a component of an oxidation-reduction system of all living cells; and nicotinic acid, or the P-P factor, is effective in the prevention of human pellagra. The other fractions of the complex have no proved place in human economy.

HOSPITAL SERVICE INSURANCE*

Following the passage of the enabling act by the Iowa legislature, and the signing of the bill by Governor Wilson, preliminary steps toward the organization of a non-profit hospital service corporation were taken. On Monday, April 10, a committee appointed by the Iowa Hospital Association met at Iowa City to begin work on the organization. With this committee were two representatives of the Iowa State Medical Society, President Arthur W. Erskine of Cedar Rapids, and Dr. E. E. Shaw, of Indianola, Chairman of the Medical Economics Committee.

Preliminary plans call for organization of a non-profit corporation for the purpose of providing for the prepayment of hospital bills. The organization is to be financed by the hospitals who cooperate, through a membership fee depending on the number of beds in the hospital. Additional funds may be secured through loans by the hospitals and through contributions from citizens who are interested in seeing the project organized as a service to the public. At present it is planned that the board of directors shall consist of nine members, a majority of whom are required by the law to be hospital executives, trustees, or members of the medical staffs of member hospitals. At least two of the members are to be physicians appointed by and from the Iowa State Medical Society. Two of the members are to be lay people who are not in any way connected with hospital administration.

The law states that the company shall provide ordinary hospital care to consist of bed, board, general nursing care, operating room, and routine drugs and medicines. With this requirement in mind, tentative drafts of the policies or memberships are being drawn up for approval. It is expected to furnish approximately twenty-one days hospital care with use of a ward bed, use of the operating room as required, general nursing care, routine laboratory tests with a limit as to amount, and routine medicines and dressings with a limit as to the amount on any one admission. It is definitely planned to omit anesthesia and x-ray from provision under the policy. With the elimination of the last two items there is no encroachment at any point on the practice of medicine.

In general the provisions will be patterned after the policy issued in the Minneapolis plan, with the exception that all medical services are eliminated. It is expected to offer full hospitalization to the policyholder, and half hospitalization to the spouse and dependents for a fee of about $1.00 per month. This can be offered at so low a figure only in groups, since it is necessary to spread the risk in order to avoid too high a percentage of the subscribers being of the chronically or repeatedly sick group. In a given group some member must be the collector for the group, or there must be a payroll deduction, since at the low price contemplated it would be financially impossible to send out monthly notices and receipts.

Studies will be made by the directors of this corporation, as they are being made in Missouri and other states, in an effort to provide some feasible method of providing hospital prepayment

*From the Medical Economics Committee.

policies or memberships to the great percentage of our population which is not in employed groups. Since Iowa is largely a rural state, the plan will fail to meet the need to a great extent, if many who work for themselves, or who live on farms and are a single employee, cannot avail themselves of prepayment for hospital care at a reasonable figure. If policies are issued to individuals, the cost of writing the policy, collecting the premium, and sending the receipts would amount to 15 to 25 per cent of the premium. In addition, individually written policies usually have a higher ratio of paid benefits than those written in groups. Studies will be made of the possibility of using farm bureau and farm union organizations as bases for memberships. Some plans have been advanced for using the subscribers to local papers as a group, with the requirement that 40 per cent of the subscribers to the paper sign up as a group before it is accepted. Clubs, church groups, societies and similar organizations could form a group, designating one of their members as secretary or collector to receive the premiums, pay them in a lump sum and receive the official receipts.

The House of Delegates of the Iowa State Medical Society approved this type of a plan, and directed the Legislative Committee to assist in passage of the enabling act. The Iowa Hospital Association, which will be the organizing body back of the corporation, has sought the advice of the medical profession, and is very willing to leave medical services out of the policy. Although the medical profession will not benefit directly from this type of organization, it will derive indirect benefit due to the fact that patients will be better able to afford hospitalization, and will spend less funds immediately in case of hospitalization.

With the final organization of this company, all the member hospitals will cease to give any type of reduction in their rates to nurses, employees, and staff members. It will be good judgment for the physicians to be among the first to apply for policies or memberships in the company. This will be good publicity for the company itself, and if a majority of the physicians of the state take out memberships in groups through the county medical societies, the policies so written, being large in number and secured at a minimum of acquisition costs, would be of great assistance in assuring the early financial stability of the corporation.

This plan, from the very start, guarantees a corporation which will be able to fulfill its obligations to its members or policyholders without question. A large reserve fund, so necessary with the commercial companies, is not required for this type of corporation. The hospitals themselves, being the organizers and backers of the corporation, and at the same time being the ones who will furnish the services guaranteed in the policy, can assure 100 per cent fulfillment of the obligation through a written agreement to furnish services to the policyholders whenever they are needed and as provided in the policy. This in reality makes the guarantee fund to be as great as the value of the hospitals which are organizing the company. With management assured by the law to remain in the hands of the hospitals and medical profession, and with the supervision of the Iowa State Insurance Department, it is felt that the corporation will be well organized, properly directed, and will remain a permanent service to the people of Iowa.

HEALTH LEGISLATION OF THE FORTY-EIGHTH GENERAL ASSEMBLY

Hospital Service Insurance

Probably the most significant legislation of the Forty-eighth General Assembly, as far as the interests of the medical profession are concerned, was the passage of House File No. 307, which is an enabling act to permit the organization and operation of non-profit corporations to contract to furnish hospital service. The act provides that hospital insurance rates and contracts must be approved by the insurance commissioner and that a majority of the directors of such corporations must be administrators, directors, trustees or members of the clinical staffs of hospitals with which contracts are entered. The act does not exempt the corporations from taxation.

The Committee on Public Policy and Legislation of the Iowa State Medical Society sponsored this measure before the legislature. The bill was well received by both houses; it was given a unanimous vote in the Senate, and there were only three negative votes in the House. The Iowa Hospital Association is now engaged in developing a non-profit corporation in accordance with the provisions of the bill. Similar measures had been presented to previous legislatures by the Iowa Hospital Association, but failed of passage.

Syphilis Control Bills

These bills consisted of House File Nos. 57, 58 and 59. House File No. 59, the premarital bill, was sponsored by the Women's Federation, written by the State Department of Health, and supported by the Iowa State Medical Society. It was passed in the House, and was lost in the Sifting Committee in the Senate. This measure would have required physical and serologic examinations

for syphilis of candidates for marriage. The original bill was amended in the House by Representative Burma of Bremer County, fixing a maximum fee of two dollars for the physician's service. Believing that fixing of fees for personal services by legislative enactment to be wrong in principle, your Legislative Committee withdrew support of the amended bill. Because of this there has been considerable criticism of our profession. The criticism has been that our interest was in the fee alone. Obviously our objection was to the principle rather than to the specific amount.

The prenatal bill, House File No. 57, was passed by both houses. It originated in and was written by the State Department of Health, and was supported by the Iowa State Medical Society in conformance with the action of the Executive Council as of November 20, 1938. It requires examination of pregnant women for syphilis. Physicians attending expectant mothers are required to take a blood test within two weeks of the time of their first examination during gestation to determine the freedom or absence of syphilis. The act provides further, that if the test is positive, then the husband or the person responsible for the pregnancy must take the blood test for syphilis, and other children in the family, if there are any, must also be examined.

House File No. 58 was passed by both houses, and deals with the reporting of positive tests for syphilis. It authorizes the State Board of Health, when physicians report individuals for failing to continue treatment for a venereal disease, to report same to the local boards of health where the individual resides. The act provides a penalty of $100 or thirty days in jail for failing to continue treatment when infected. It exempts persons from the required treatment when religious beliefs by members of recognized denominations are in conflict. The exemption clause is unfortunate and was included over the protest of the Iowa State Medical Society. Obviously a public health measure which permits exemption on the basis of religious tenets is not a public health measure for exempted classes.

Special Election in Polk County Authorized

Senate File No. 75 was passed by both houses. It authorizes an election in Polk County on issuance of bonds for addition to and equipment of Broadlawns hospitals. The act supplements the existing law which provides for elections on issuing bonds to build hospitals but makes no provision for elections on bonds to build additions or add equipment. It also increases the maximum levy permitted for improvements and maintenance from one and one-fourth mills to two mills. Under the act the county may vote on issuing an amount of bonds which can be retired with a one-half mill levy in twenty years. Elections under it must carry by a 60 per cent majority.

Pharmacy Bills

House File Nos. 604 and 605 would have provided for the licensing of drug stores and the permits for limited sale of drugs by general dealers in towns without licensed pharmacies; also the regulation of the sale and distribution of poisons. Because of the regulatory features these bills met with much opposition from general and special mercantile fields. The bills were passed in the House, but were not considered in the Senate.

Optometry Bills

House File No. 543 dealt with the grounds for revocation of license, involving all fields of healing arts. It had some merit. The consensus of opinion was that, as drawn, the bill was open to widely differing interpretations. It did not arrive on the calendar. House File No. 594 proposed additional educational requirements in optometry. It was not placed on the calendar.

Standards for Scientific Tests for Alcoholic Intoxication

House File No. 558 fixed legal standards for scientific tests. In 1938 the House of Delegates of the Iowa State Medical Society appointed a scientific committee to study this subject, and assist the Committee on Public Policy and Legislation in cooperation with the Iowa State Safety Council in presenting a bill which would make these tests legal. The scientific committee did its part admirably. Your Legislative Committee, in accordance with the expressed opinion of the Executive Committee of the Iowa State Medical Society, believed that the major responsibility for promoting this matter should be assumed by the Iowa State Safety Council. Therefore, your committee did not push the matter in the first part of the session. The political entanglements of the Iowa State Safety Council are matters of public record. When it became apparent that the Safety Council was so involved in "reorganization bills" that it could not be expected to give much attention to this matter, your Legislative Committee had the bill introduced, but it was too late to expect constructive action. The bill as written is in good shape, and should be presented early in the next legislative session. The Indiana legislature recently adopted a similar bill and is the first state to have such a statute on the books.

Hospitals for the Insane

House File No. 138 was passed by both houses. It provides for the transfer of inmates of the four state insane hospitals to the county homes of their residence upon the recommendation of a commission to be composed of the superintendent of the hospital, the chairman of the board of supervisors, and the county insanity commissioners. The boards of supervisors would have to approve a transfer. The act is designed to alleviate overcrowding in the insane hospitals. Sponsors say the average yearly cost per patient at a state hospital is $360.00; at a county home, $120.00. The act permits enlarging of county home facilities from the county insane fund.

House File No. 139, introduced by Representative Lampman of O'Brien County, required that a physician should be a member of the Board of Control. Bills of this character, that is, statutes fixing the type of training of appointees to various boards and commissions, were not favorably received by the administration. This one made no progress.

Settlement of Insurance Estates

House File No. 251, introduced by Representative Hallagan of Polk County, was lost in the Sifting Committee of the Senate. This provides that the proceeds of any life insurance, endowment, annuity, or accident insurance, paid or payable to the named insured, his estate or to his personal representatives, shall not be exempt from the costs of administration of the insured person's estate, nor from the charges for his last sickness and funeral, in such amounts as the court may allow. It is a good bill and should become a law.

Chiropractic Bills

House File No. 120, introduced by Representatives Kohlhaas, Martin, Randall, Dietz and Dvorak, provided for the practice of physiotherapy by chiropractors. This was killed by indefinite postponement in the Public Health Committee of the House. Subsequent thereto, the Supreme Court rendered its decision in the rehearing of the State vs. Boston case, in which the court again stated the exclusion of physiotherapy from chiropractic. Following this court action, House File No. 431 was introduced, providing for increased educational requirements and the inclusion of physiotherapy in the practice of chiropractic. Tremendous pressure was put upon members of the House of Representatives in connection with this bill. It was placed on the calendar during the closing days of the session. An effort was made to set a time for special consideration, but only nine votes favored such a procedure. At the close of the session the bill was in the Sifting Committee of the House. Petitions, telegrams, letters, much time on the radio, and every conceivable avenue was used by proponents of this measure to obtain favorable consideration. Your Legislative Committee predicts there will be a continual build-up for a similar bill in the next General Assembly.

On the whole we believe we were given very favorable consideration by the legislature. This was certainly true in major matters, and we believe we have many friends in the last General Assembly.

CONFERENCE ON CHILD DEVELOPMENT AND PARENT EDUCATION

The Thirteenth Iowa Conference on Child Development and Parent Education will be held in Iowa City, Iowa, June 20, 21, and 22, 1939. The conference is sponsored by the Iowa State Council for Child Study and Parent Education with the cooperation of the Iowa Child Welfare Research Station and the Extension Divisions of the University of Iowa, Iowa State College, and Iowa State Teachers College.

The general theme for this conference will be "Youth in the World Today." No admission fee will be charged for any of the conference sessions.

A feature of this year's program will be a special consideration of the problems of youth. Two round table groups will meet simultaneously; one group, limited to persons under twenty-five years of age, on "Youth Discusses Its Own Problems"; and another older group on "Adults Discuss Youth Problems." At a later session the discussion of the two round tables will be pooled.

The following lectures and speakers have been scheduled:

Youth Looks to Recreation.

Recreation as a National Enterprise—Dr. Jay B. Nash, Professor of Education, Department of Physical Education and Health, New York University, New York City.

Understanding Your Child—Dr. Caroline B. Zachry, Progressive Education Association, New York City.

Family Life Among the Primates—Dr. Kenneth W. Spence, Associate Professor of Psychology, University of Iowa.

Problem Communities—Miss Charlotte Carr, Director, Hull-House, Chicago, Illinois.

Youth Takes Hold.

The Needs of Youth—Mr. Howard M. Bell, Associate Director of the American Youth Commission, American Council on Education, Washington, D. C.

Helping Iowa Youth Find Jobs—Mr. Edward Herbert, Director, Iowa State Employment Service, Des Moines, Iowa.

Problems of Marriage—Dr. Moses Jung, Professor of Religion, University of Iowa.

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—MRS. DEAN W. HARMAN, Glenwood
Secretary—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City
Treasurer—MRS. WILLIAM R. HORNADAY, 3011 High Street, Des Moines

REPORT OF THE TENTH ANNUAL SESSION

The Woman's Auxiliary to the Iowa State Medical Society met for its Tenth Annual Session on Tuesday and Wednesday, April 25 and 26, 1939, at the Hotel Fort Des Moines in Des Moines. The Polk County Auxiliary with Mrs. Charles Ryan and Mrs. A. E. Merkel as chairmen, served as hostesses, and planned beautifully for the comfort and pleasure of the visiting women.

The opening occasion was a luncheon on Tuesday noon for board members and county auxiliary presidents. A pre-convention board meeting followed. The afternoon and evening offered fellowship and interest, through a visit to the United States Veterans Hospital, teas in the homes of three Des Moines doctors, and a bridge party held in the Tropical Room of the Hotel Fort Des Moines. The teas were planned as more intimate occasions and were held in the lovely homes of Dr. Cecil J. Jones, Dr. J. B. Synhorst and Dr. John T. Strawn.

The concluding social event was a charming luncheon in Younkers Tearoom on Wednesday which was largely attended and made an especially happy occasion by the presence of Dr. Felix A. Hennessy, the incoming president of the State Society. Dr. Hennessy suggested that the State Auxiliary might make a fine contribution to the welfare of the state by working on the development of a mental hygiene association. He said that we are looking for help in juvenile problems and that the mental hygiene association has proved of great value in those localities where it has been functioning. The care of the mental cases in the state is most inadequate and he feels convinced that the development of a mental hygiene association would mean a great reduction in the load of mental cases to be cared for, and that it is an area in which the axuiliaries may very well work.

The business meeting was opened at 9:15 Wednesday morning, with Mrs. D. W. Harman of Glenwood, president, presiding. Reports of state officers, standing committees and fourteen county presidents were given. Mrs. James A. Downing of Des Moines presented the Gertrude Downing cup to Monroe county for more than a fifty per cent gain in membership this year. Mrs. T. A. Moran of Melrose received the cup.

Mrs. W. A. Seidler of Jamaica, in presenting her report on the Public Relations Committee, quoted Dr. Irvin Abell, president of the American Medical Association, as follows: "Women should constitute the American Medical Association's committee on public relations". He charged auxiliary members "with the responsibility of educating themselves and others on medical problems and achievements". Mrs. Seidler reported the promotion of public health programs, speakers for which were secured from the Speakers Bureau of the Iowa State Medical Society. The essay contest brought in 175 essays from 93 schools, with 58 boys and 117 girls competing. The winner of the contest, Hazel Brockett of East High School in Des Moines, read her essay on "Good Health, How to Maintain It".

Mrs. Charles Ryan of Des Moines, chairman of the Legislative Committee, reported that the State Legislature had passed two bills of interest to us; first, an enabling act for non-profit hospital service insurance; and second, the prenatal bill. (For details of these bills, see page 220 in this issue of the JOURNAL.)

Mrs. Georgia Rockafellow of Des Moines, chairman of Hygeia Committee, reported on her efforts with county presidents to get *Hygeia* before nurses, teachers and educators in their counties. The results were subscriptions sent in as follows: Dallas-Guthrie, nineteen; Dubuque, twelve; Jackson, two; Madison, two; Muscatine, twenty-seven; Polk, six; and Pottawattamie, thirteen.

The Education and Program Committee reported, through its chairman, the promotion of the program suggested by the national program chairman, which had two emphases, maternal and child care and adolescent health.

A memorial service was conducted by Mrs. A. E. Merkel in memory of Mrs. William Greenleaf of Atlantic, Mrs. Mary Cooper of Villisca, and Mrs. H. H. Decker of Des Moines.

Mrs. E. L. Bower of Guthrie Center, a charter member of the Auxiliary presented and read a valuable history of the Iowa Auxiliary's first ten years,

which she had prepared. This history is to be placed on file for safe keeping. Mrs. Floyd Burgeson reported for the Registration Committee that 123 women had been registered.

Two interesting high lights of the meeting merit special consideration; one was a very fine presentation by Dr. Alonzo L. Jenks of Des Moines, of the National Health Program; and the second was a most entertaining book review session by Mrs. Edith Webber, of Des Moines. Dr. Jenks' talk may be briefly summarized as follows: In 1935 the President appointed the Interdepartmental Committee which made five recommendations which were incorporated in the President's message to Congress on January 23, 1939. The recommendations were as follows:

1. Expansion of public health services.
2. Expansion of hospital facilities.
3. Medical care for the medical needy.
4. General programs of medical care to be paid for by taxes which would amount to five per cent of the total national income.
5. Insurance against loss of wages due to illness.

The American Medical Association agrees that there is considerable need for expansion of public health facilities when such are directed in the channels of preventive medicine and not treatment. It feels that maternal and child welfare service should be expanded also. It believes that construction of new hospitals should be limited to those localities where definite need is proved. Recommendation 4 is compulsoroy health insurance with state medicine, pure and simple, and as such has been vigorously opposed by the American Medical Association. This system is definitely not to the advantage either of the patient or the physician, as has become evident in countries where such systems are in operation. The quality of medical service is inevitably lowered. In place of compulsory health insurance and socialized medicine, voluntary hospital and medical indemnity insurance should be made available on a non-profit basis. In regard to the last point, the American Medical Association favors the instituting of some form of wage insurance.

Newly elected officers of the Auxiliary are: Mrs. E. A. Hanske of Bellevue, president; Mrs. E. T. Warren of Stuart, president elect; Mrs. W. R. Hornaday of Des Moines, first vice president; Mrs. F. W. Mulsow of Cedar Rapids, second vice president; Mrs. E. D. Miller of Wellman, third vice president; Mrs. C. B. Hickenlooper of Winterset, fourth vice president; Mrs. W. J. Connell of Dubuque, secretary; and Mrs. Jay C. Decker of Sioux City, treasurer. Mrs. Channing G. Smith of Granger was elected to the board for two years, and Mrs. S. E. Lincoln of Des Moines was elected to the board for one year.

AN INSPIRATION

The May, 1939, News Letter, issued by the Woman's Auxiliary to the American Medical Association, carries messages from several presidents of state auxiliaries, reporting on the activities and efforts of their respective organizations. We would like to bring to our members a thought expressed by Mrs. John B. Howell, president of the Woman's Auxiliary to the Mississippi State Medical Society, who in speaking of our struggles to achieve higher and loftier aims, quotes John Stuart Mills as follows:

"All the sources of human suffering are in a great degree, many of them almost entirely, conquerable by human care and effort, and though their removal is grievously slow, though a long succession of generations will perish in the breach before the conquest is completed; yet every mind sufficiently intelligent and generous to bear a part, however small and inconspicuous, will draw a noble enjoyment from the contest itself which he would not for any bribe, in the form of selfish indulgence, consent to be without".

HEALTH ESSAY CONTEST WINNERS

The Health Essay Contest Committee of the Woman's Auxiliary to the Iowa State Medical Society announces the following prize winners of the 1939 contest: first prize and twenty dollars, Hazel Brockett of Des Moines; second prize and ten dollars, Alvin Goettsch of Atlantic; and third prize and five dollars, Viola Lewis of Huxley.

Honorable mention and one dollar prizes were awarded Garth Hart of Leon, Alicia Leeney of Riverside, Adeline Carlson of Lanyon, Bill Hutchison of Perry, Betty Knotts of Afton, Charles Hewitt of Des Moines, Jeanette Kuehl of Davenport, Veronica Walsh of Larchwood, Mary Helen Woods of Webster City, and Marilyn Nott of New London.

Final judges of the contest this year were Miss Jessie Parker, State Department of Public Instruction; Mrs. D. J. Glomset; Walter L. Bierring, M.D., State Department of Health; Daniel J. Glomset, M.D., Iowa State Medical Society; Mrs. S. E. Lincoln, past president of the Woman's Auxiliary; and Mrs. W. A. Seidler, chairman of the Health Essay Contest Committee.

SPEAKERS BUREAU RADIO SCHEDULE

WOI and WSUI—Tuesdays at 4:00 p. m.

May	9	Good Health And How To Maintain It, Hazel Brockett, Des Moines (Woman's Auxiliary Essay Contest Winner).
May	16	What Are Glands, And What Part Do They Play In Physiology In General? J. Stuart McQuiston, M.D.
May	23	Diseases of the Pituitary Glands, Walter Gary, M.D.
May	30	The Thyroid Gland and Its Diseases, Paul A. White, M.D.
June	6	Vacations, W. R. Brock, M.D.

SOCIETY PROCEEDINGS

Adair County

A. Fred Watts, M.D., of Creston, furnished the scientific program for the Adair County Medical Society at a meeting held Friday, April 7, at the Hotel Greenfield in Greenfield. Dr. Watts spoke on the Peculiarities of Symptoms in Children as Compared to Those in Adults.

Black Hawk County

Members of the Black Hawk County Medical Society met in regular session, Tuesday, April 18, at Black's Tearoom in Waterloo. Guest speaker for the occasion was William F. Braasch, M.D., of The Mayo Clinic, Rochester, Minnesota, who discussed the dangers of delay in handling cases where blood has appeared in the urine.

Boone-Story Society

The Boone and Story County Medical Societies met in joint session in Boone, Wednesday, March 22, for a dinner meeting at the Holst Hotel. Members were addressed by Samuel M. Feinberg, M.D., associate professor of medicine, Northwestern University Medical School, Chicago, on Allergy in Relation to the General Practice of Medicine.

Bremer County

The combined monthly meeting of the Bremer County Medical Society and the staff of St. Joseph's Mercy Hospital was held at the Fortner Hotel in Waverly, Wednesday, April 19. A six-thirty dinner preceded the following program: Ovarian Neoplasms: Their Pathologic and Surgical Significance, Virgil S. Counseller, M.D., The Mayo Clinic, Rochester, Minnesota; and Special Ovarian Neoplasms, Malcolm B. Dockerty, M.D., also of The Mayo Clinic, Rochester, Minnesota.

O. C. Hardwig, M.D., Secretary

Dallas-Guthrie Society

The regular meeting of the Dallas-Guthrie Medical Society was held in Panora, Thursday, April 20, and the following program was presented after the noon luncheon: The Home and Juvenile Delinquency, F. A. Ely, M.D., of Des Moines, discussion opened by C. E. Irwin, M.D., of Woodward; and Puerperal Inversion of the Uterus, E. J. Butterfield, M.D., of Dallas Center, discussion opened by J. M. Margolin, M.D., of Perry.

S. J. Brown, M.D., Secretary

Des Moines County

John H. Peck, M.D., superintendent of Oakdale Sanatorium, presented a very interesting talk on The Fate of the Sanatorium Patient, which evoked considerable discussion, at the regular meeting of the Des Moines County Medical Society, held Tuesday, April 11, at the Hotel Burlington in Burlington.

E. P. Russell, M.D., Secretary

Dubuque County

The Dubuque County Medical Society met in regular session Tuesday, April 11, at the Finley Hospital Nurses' Home in Dubuque. A surgical symposium was given by local men. A. G. Plankers, M.D., presented a case of Congenital Absence of the Hepatic Ducts; A. B. Nesler, M.D., had a case of Perforated Gastric Ulcer; H. A. Stribley, M.D., presented a case of Intestinal Obstruction Due to a Large Gall Stone; and J. M. Walker, M.D., had one on Torsion of a Broad Ligament Cyst. These cases were given as diagnostic problems and were freely discussed. The meeting was well attended and thoroughly enjoyed.

J. J. Mueller, M.D., Secretary

Greene County

Abram E. Bennett, M.D., assistant professor of neuropsychiatry, University of Nebraska, College of Medicine, Omaha, was the speaker of the evening when the Greene County Medical Society met in Jefferson, Thursday, April 13. Dr. Bennett spoke on Treatment of Psychiatry Patients.

Hardin County

Members of the Hardin County Medical Society were guests of the trustees of the Ellsworth Hospital at a meeting held in Iowa Falls, Tuesday, April 18. W. M. Fowler, M.D., of the State University of Iowa, College of Medicine, Iowa City, spoke on Sulfanilamide and Sulfapyridine.

W. E. Marsh, M.D., Secretary

Henry County

The Henry County Medical Society met at the Harlan Hotel in Mt. Pleasant, Friday, April 14, for its regular monthly dinner and program. John C. Parsons, M.D., of Des Moines, addressed the group on Diagnostic Features of Early and Late Tuberculosis.

Jasper County

A. E. Feller, M.D., of the State University of Iowa, College of Medicine, Iowa City, was guest speaker for the Jasper County Medical Society at a meeting held in Newton, Tuesday, April 4, taking for his subject the general topic of Allergy.

Johnson County

The scientific program presented before members of the Johnson County Medical Society, Wednesday, April 5, at a meeting held in the Hotel Jefferson in Iowa City, consisted of the following three addresses on the eye: Treatment of Conjunctivitis, J. H. Allen, M.D., of Iowa City; Differential Diagnoses of Cataract and Glaucoma, A. E. Braley, M.D., of Iowa City; and Treatment of Minor Injuries, P. J. Leinfelder, M.D., of Iowa City.

Linn County

The next meeting of the Linn County Medical Society will be held Friday, May 12, at the Hotel Roosevelt in Cedar Rapids. The society will entertain as its guest, Fred H. Albee, M.D., of New York, who is scheduled to address the group on Radical Resection of Bone Carcinoma with Immediate Restoration by Bone Graft. Discussion of the presentation will be opened by Arthur Steindler, M.D., of Iowa City, W. G. Bessmer, M.D., of Davenport, and A. W. Erskine, M.D., of Cedar Rapids.

T. F. Hersch, M.D., Chairman
Program Committee

Pocahontas County

On Thursday, March 16, members of the Pocahontas County Medical Society met at the office of Dr. C. L. Jones in Gilmore City, where Robert F. Hansen, M.D., of the State Department of Health, Des Moines, gave an illustrated lecture on syphilis.

Scott County

James K. Stack, M.D., associate in surgery, Northwestern University Medical School, was guest speaker for the Scott County Medical Society at a meeting held in Davenport, Tuesday, April 4. Following the six o'clock dinner, Dr. Stack presented the address of the evening.

Preston E. Gibson, M.D., Secretary

Sioux County

The Sioux County Medical Society met at the Hawarden Hospital in Hawarden, Tuesday, April 11, at which time William Doornink, M.D., of Orange City, presented a paper on Chest Pain, and M. O. Larson, M.D., of Hawarden, spoke on Modern Trends in Treating Appendicitis. At the business meeting, programs were approved for preschool examinations and school testing for smallpox and diphtheria.

C. B. Murphy, M.D., Secretary

Taylor County Annual Meeting

The annual election of officers for the Taylor County Medical Society, held in Bedford, Wednesday, April 12, resulted as follows: Dr. G. W. Rimel of Bedford, president; Dr. L. T. Reed of Gravity, vice president; Dr. Roe B. Reed of Clearfield, secretary and treasurer; and Dr. Rimel, delegate.

Woodbury County

John D. Camp, M.D., assistant professor of radiology at The Mayo Clinic, Rochester, Minnesota, furnished the scientific program for the Woodbury County Medical Society, at the meeting held Thursday, April 13, at the West Hotel in Sioux City. Dr. Camp spoke on Malacic Diseases of the Bones.

W. H. Gibbon, M.D., Secretary

Iowa Clinical Medical Society

The Iowa Clinical Medical Society met at the University Hospital in Iowa City, Saturday, April 15. The morning program consisted of case reports by Philip C. Jeans, M.D., Ruben Nomland, M.D., and Fred M. Smith, M.D., and a paper on The Influence of Pulmonary Emphysema on the Heart, by Horace M. Korns, M.D. In the afternoon the following program was presented: Possible Uses of Purified Thrombin, H. P. Smith, M.D.; Treatment of Renal Calculi, R. H. Flocks, M.D.; Treatment of Hypoparathyroidism with A T-10, James A. Greene, M.D.; and Treatment of Hay Fever, A. E. Feller, M.D. All speakers were members of the staff of the State University of Iowa, College of Medicine. Dr. W. M. Fowler, of the department of internal medicine, was in charge of arrangements for the meeting. Officers elected for the ensuing year are: Dr. Raymond S. Grossman of Marshalltown, president; Dr. E. E. Shaw of Indianola, vice president; and Dr. J. Stuart McQuiston of Cedar Rapids, secretary and treasurer.

Iowa and Illinois Central District Medical Association

Essayists scheduled to appear on the program for the Iowa and Illinois Central District Medical Association meeting in Davenport on Thursday, May 11, are as follows: Edward B. Tuohy, M.D., of Rochester, Minnesota, associate in anesthesia, The Mayo Clinic; John A. Borghoff, M.D., associate professor of dermatology, Creighton University School of Medicine, Omaha; James B. Eyerly, M.D., assistant clinical professor of medicine, Rush Medical College, Chicago; and Fred H. Albee, M.D., professor of orthopedic surgery, Cornell Medical School, New York.

James Dunn, M.D., Secretary

PERSONAL MENTION

Dr. E. D. Plass, head of the department of obstetrics and gynecology, State University of Iowa, College of Medicine, spoke at the reunion of former staff members of the Henry Ford Hospital, Detroit, Michigan, on Friday, April 14. His subject was "Latent Gonorrhea."

Dr. E. E. Shaw of Indianola, addressed a joint meeting of the Warren Post of the American Legion and the Auxiliary Unit, Tuesday, April 4, on the subject, "Eradication of Congenital Syphilis."

Dr. Fred M. Smith, head of the department of internal medicine, and Dr. William Malamud, professor of psychiatry, State University of Iowa, College of Medicine, spoke at the annual meeting of the Missouri State Medical Association in Excelsior Springs, April 10 to 12. Dr. Smith spoke on "The Diagnosis and Treatment of Coronary Thrombosis", and Dr. Malamud on "Modern Trends in the Treatment of Schizophrenia."

Dr. Della Galinsky, formerly of Sioux City, has moved to Chicago, where she will be associated with the North Chicago Hospital.

Dr. Bernard C. Barnes of Des Moines was guest speaker for the Harlan Kiwanis Club at its regular meeting held Thursday, March 30, at Hotel Saylor in Harlan. Dr. Barnes presented an illustrated lecture on "The Various Stages of Syphilis."

Dr. Winston C. Baltzell has located in Charles City where he will be associated in the general practice of medicine and surgery with Dr. D. C. Mackie, according to a recent announcement. Dr. Baltzell was graduated in 1935 from the University of Louisville, School of Medicine. He has had special postgraduate work in surgery, and for the past year has held a residenceship at the Louisville City Hospital.

Dr. James G. Macrae of Creston, addressed the Creston Rotary Club, Monday, March 27, at a public meeting on "Socialized Medicine."

Dr. Leland S. Lewis, formerly located in Vinton, has moved to Garrison where he will continue in the general practice of medicine and surgery. He was graduated in 1934 from Rush Medical College, University of Chicago.

Dr. Arthur Steindler, head of the department of orthopedic surgery, State University of Iowa, College of Medicine, discussed the subject, "Fracture Deformities and Contractures", before the North Shore Branch of the Chicago Medical Society on Tuesday, April 4.

Dr. Arch F. O'Donoghue of Sioux City was guest speaker at the Nebraska State Medical Society annual meeting in Grand Island, Nebraska, Tuesday, May 2, presenting an illustrated lecture on "Fractures of the Hip."

Dr. A. E. Feller of the department of internal medicine, State University of Iowa, College of Medicine, has been awarded a National Research Council fellowship in the medical sciences for the year from July 1, 1939, to July 1, 1940. He will spend the year at Harvard Medical School as a member of the staff of the bacteriology and immunology department, working under the direction of Dr. Hans Zinsser.

Dr. F. M. Roberts of Knoxville spoke on "Quackery vs. Scientific Medicine", at the regular meeting of the Centerville Commercial Association, Monday noon, April 3.

Dr. Ralph H. Heeren of the department of preventive medicine, State University of Iowa, College of Medicine, has been granted a year's leave of absence from the University to take a fellowship from the Rockefeller Foundation, effective September 1, 1939. He will be a staff member of the department of preventive medicine and epidemiology in the Harvard School of Public Health in Boston, Massachusetts.

MARRIAGES

The marriage of Miss Marion Twedell of Austin, Minnesota, and Dr. Sidney Brody of Ottumwa, was recently announced. Dr. Brody was graduated in 1937 from the State University of Iowa, College of Medicine, Iowa City, and completed his interneship at Broadlawns General Hospital in Des Moines. The young couple will make their home in Ottumwa, where Dr. Brody is engaged in the practice of medicine and surgery.

Miss Lola Heikens of Sioux City and Dr. H. M. Levin, formerly of Sioux City, were united in marriage in Kansas City, March 16. Immediately after the ceremony they returned to Villisca, where the bridegroom has recently entered general practice.

DEATH NOTICES

Elmer, Albert William, of Davenport, aged eighty-one, died April 6 at St. Luke's Hospital in Davenport. He was graduated in 1886 from the University of Pennsylvania, School of Medicine, Philadelphia, and at the time of his death was a Life Member of the Scott County and Iowa State Medical Societies.

Fobes, Henry Lawrence, of Auburn, aged seventy, died suddenly April 4. He was graduated in 1897 from the State University of Iowa, College of Medicine, Iowa City, and at the time of his death was a member of the Sac County Medical Society.

Hagedorn, Harry Herbert, of Sioux City, aged fifty-five, died April 4 of uremic poisoning. He was graduated in 1909 from the State University of Iowa, College of Medicine, Iowa City, and at the time of his death was a member of the Woodbury County Medical Society.

History of Medicine in Iowa

Edited by the Historical Committee

Dr. Frank M. Fuller, Keokuk
Dr. John T. McClintock, Iowa City
Dr. R. T. Lenaghan, Clinton
Dr. Tom B. Throckmorton, Des Moines
Dr. Walter L. Bierring, Des Moines
Dr. William Jepson, Sioux City

An Appreciation—Albert W. Elmer, M.D.
1858–1939

Gordon F. Harkness, M.D., Davenport

The past thirty years have been a transitional period in the art of the practice of medicine. To those of us who have had an intimate professional association with those of a preceding generation, there has been bequeathed a heritage rich in the ideals of medicine.

The writer began his private practice with Dr. A. W. Elmer, who recently passed away. Dr. Elmer was born in Harrisville, Alcona County, Michigan, on the shores of Lake Huron, in 1858. His father was a commercial fisherman, having formerly been a salt water sailor, who had traveled far. The first ten years of Dr. Elmer's life was similar to that of the early pioneers, isolated from schools, but with a family environment which instilled everything that was best in life. In 1868 the family came to Iowa and lived on a farm about twenty miles from Davenport. He grew up in the outdoors, his early life was close to nature, and he acquired a love and practical knowledge of natural history. His desire for knowledge and his ambitions brought him to Davenport, where through his own efforts he received his degree from Griswold College in 1883. Two years were spent at the University of Michigan, from which institution he transferred to the University of Pennsylvania, obtaining his degree in medicine in 1886.

In 1890 Dr. Elmer married Miss Kate Hart of Adrian, Michigan. A daughter preceded him in death, and a son, Dr. W. H. Elmer, is an ophthalmologist and otolaryngologist in Rockford, Illinois.

Practically throughout his professional life Dr. Elmer was a member of the American Medical Association, and was always affiliated with the local medical societies. He was a past president of the Scott County Medical Society. He became a member of the American College of Surgeons when it was organized and early in the history of that organization was made a life member. Those were the days when men in the specialties of medicine were largely self-made. Partly through the influence of Dr. Risley of Philadelphia, who was a former Davenporter, Dr. Elmer limited his practice to diseases of the eye, ear, nose and throat. He spent the year of 1897 in Vienna. He was one of the pioneers in Iowa in his field of medical practice.

In his life he was always the student. His recreation was his library and the outdoors. He had the reverence of an archeologist for the past. He had hunted and fished from British Columbia to Texas. Early in life he developed an appreciation of music, and no one had a keener appreciation of the operas. This was all combined with such a reticence and modesty, that many of those not close to him never realized what a storehouse of information he commanded. With it all his professional ideals were never sullied by any act of his; yet he never thought of them as anything but the code of any real physician. In his later years, and with his retirement from active practice, he retained his keenness of mind. A visit with him was always one of profit. Not the least of the threads of life are those intimate associations with our fellow men. In the breaking of this thread, there is brought an appreciation of a friendship that began with the writer's entrance into the practice of medicine, and was never broken until his death—a friendship of honor and faith in one's fellow man. This, together with a

mind of most unusual cultural knowledge, made an association the memory of which will never dim.

Indicative of the regard with which Dr. Elmer was held is the following editorial, which appeared in the Davenport *Times* of April 7:

"Dr. A. W. Elmer, who passed away at St. Luke's Hospital yesterday, will be remembered by the older generation in Davenport as an exemplar of the loftiest traditions of his profession. Having attended the most celebrated clinics in Europe, conducted by the most eminent specialists in the world, he came to be widely recognized as an authority in that particular branch of medicine in which he specialized; that having to do with the eye, ear and nose.

"He came to enjoy a large and lucrative practice, yet gave as generously of his talents to those who could not pay as to his most affluent patient.

"A product of an Iowa farm, he achieved notable preparation for his life's work entirely through his own efforts. The industry and zeal which inspired him to embrace the sacrifices necessary to attain eminence in his profession, he continued to display throughout his long career.

"He was a distinguished member of that coterie of Davenport physicians, headed by Dr. Peck and including such able practitioners as Drs. Middleton, Hill and Braunlich, whose skill gave to this city in an early day widespread fame as a center of medicine.

"Virile and robust, his interests and enthusiasms were broad and numerous. A great nature lover, he was one of the best informed men on natural history in these parts. He found relaxation from an arduous practice in hunting, in reading and in his love and pursuit of the fine arts.

"Of a retiring nature and disposed to be reclusive he preferred his library to social contacts. In an earlier day he had been a teacher at St. Katharine's and throughout his life he displayed an avidity for knowledge of a most diversified nature.

"A devotee of the arts, of music and literature, such time as he could take from his professional activities was expended in the enjoyment of the best that the literary minds and the musical genius of the world had produced. A lover of opera, his library of recording was one of the largest in this section.

"He will be mourned as the last of an old school of doctors who attained eminence largely by their own efforts and native talents, whose cultural contribution to the community was as pronounced as their professional skill."

COMING MEETINGS

Because we feel that many of the members of the Iowa State Medical Society may be interested in a number of national and special meetings, we are herewith publishing a calendar of the approaching sessions. More detailed information may be secured from the JOURNAL office.

Fourteenth Scientific Session, American Heart Association, Hotel Jefferson, St. Louis, Missouri. Cardiac program, May 12; program of the section for the study of the peripheral circulation, May 13.

American Medical Association, May 15 to 19, 1939, St. Louis, Missouri. Secretary, Dr. Olin West, 535 North Dearborn Street, Chicago, Illinois.

Amercian Board of Ophthalmology. Examinations for 1939 are scheduled as follows: written, August 5; oral, October 6, Chicago. Secretary, Dr. John Green, 6830 Waterman Ave., St Louis, Missouri.

Annual Meeting of the American Association for the Study of Goiter, May 22, 23 and 24, 1939, Cincinnati, Ohio, with program of scientific papers and dry and operative clinics. Secretary, Dr. W. Blair Mosser, Kane, Pennsylvania.

Twenty-fourth Annual Meeting, American Association of Industrial Physicians and Surgeons, with the American Conference on Occupational Diseases and Industrial Hygiene, June 5, 6, 7 and 8, 1939, Hotel Statler, Cleveland, Ohio. Chairman, Dr. G. F. Sykes, 842 East 79th Street, Cleveland, Ohio.

Twin Lakes District Medical Society, June 15, Lake Okoboji, Arnold's Park, Iowa.

Eighteenth Annual Convention of the American Physiotherapy Association, June 25 to 30, 1939, Hotel Cosmopolitan, Denver, Colorado.

American Board of Internal Medicine. Written examinations will be held October 16, 1939 (formal application must be received by August 20, 1939); and February 19, 1940 (application must be received before January 1, 1940). Secretary, Dr. William S. Middleton, 1301 University Avenue, Madison, Wisconsin.

First American Congress on Obstetrics and Gynecology, September 11 to 15, 1939, Cleveland, Ohio. Address secretary at 650 Rush St., Chicago, Illinois.

Third Congress of the Pan-Pacific Surgical Association, September 15 to 28, 1939, Honolulu, Hawaii. Sail from Los Angeles, September 7, or San Francisco, September 8. Address Dr. George W. Swift, 902 Boren Avenue, Seattle, Washington; or Dr. Forrest J. Pinkerton, Young Building, Honolulu, Hawaii.

Fifth Annual Meeting of the Mississippi Valley Medical Society, September 27 to 29, 1939, Burlington, Iowa. Secretary, Dr. Harold Swanberg, Quincy, Illinois.

Forty-fourth Annual Convention American Academy of Ophthalmology and Otolaryngology, October 8 to 13, 1939, Palmer House, Chicago. Address Academy at 1500 Medical Arts Building, Omaha, Nebraska.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

CLINICAL LABORATORY METHODS AND DIAGNOSIS—By R. B. H. Gradwohl, M.D., St. Louis. Second edition. The C. V. Mosby Company, St. Louis, 1938. Price, $12.50.

INFECTIONS OF THE HAND—By Allen B. Kanavel, M.D., late professor of surgery, Northwestern University Medical School. Seventh edition, thoroughly revised. Lea and Febiger, Philadelphia, 1939. Price, $6.00.

A MANUAL OF FRACTURES AND DISLOCATIONS—By Barbara Bartlett Stimson, M.D., associate in surgery, College of Physicians and Surgeons, Columbia University. Illustrated. Lea and Febiger, Philadelphia, 1939. Price, $2.75.

MEDICINE IN THE OUTPATIENT DEPARTMENT—By Winthrop Wetherbee, Jr., M.D., junior visiting physician, Boston City Hospital. Paul B. Hoeber, Inc., New York, 1938. Price, $1.00.

OUR COMMON AILMENT—By Harold Aaron, M.D., medical consultant to Consumers Union of United States. Dodge Publishing Company, 116 East 16th Street, New York, 1938. Price, $1.50.

PHYSICAL DIAGNOSIS—By Richard C. Cabot, M.D., professor of clinical medicine emeritus, Harvard University; and F. Dennette Adams, M.D., Harvard Medical School. Twelfth edition. William Wood and Company, Baltimore, 1938. Price, $5.00.

SCARLET FEVER—By George F. Dick, M.D., professor of medicine, University of Chicago; and Gladys Henry Dick, M.D. The Year Book Publishers, Chicago, 1938.

SUPERFLUOUS HAIR AND ITS REMOVAL—By A. F. Niemoeller, A.B., M.A., B.S., with a foreword by M. H. Marton, M.D. Harvest House, New York, 1938. Price, $2.00.

SURGERY OF ORAL AND FACIAL DISEASES AND MALFORMATIONS—By George van Ingen Brown, M.D., emeritus professor of plastic surgery, University of Wisconsin. Fourth edition. Lea and Febiger, Philadelphia, 1938. Price, $10.00.

SURGICAL PATHOLOGY OF THE DISEASES OF THE MOUTH AND JAWS—By Arthur E. Hertzler, M.D., professor of surgery, University of Kansas. J. B. Lippincott Company, Philadelphia and London, 1938. Price, $5.00.

TRAUMA AND INTERNAL DISEASE—By Frank W. Spicer, M.D. Illustrated. J. B. Lippincott Company, Philadelphia and London, 1939. Price, $7.00.

THE TREATMENT OF FRACTURES—By Charles Locke Scudder, M.D., formerly assistant professor of surgery, Harvard Medical School. Eleventh edition, revised. W. B. Saunders Company, Philadelphia and London, 1938. Price, $12.00.

BOOK REVIEWS

TRAUMA AND INTERNAL DISEASE

By Frank W. Spicer, M.D., F.A.C.P. Illustrated. J. B. Lippincott Company, Philadelphia and London, 1939. Price, $7.00.

The purpose of this material, presented in a single volume by the author, is to present a careful study of the rôle of trauma as an etiologic factor in causation of disease of the viscera and body structures. The discussion of the etiology, pathology, clinical processes and end results of apparently trivial injuries is classified with the early or late manifestations. The effect upon healthy organs and structures as well as the effect upon organs or structures which present preëxisting disease is also considered. The above statements are taken from a paragraph in the preface of this volume.

It is quite apparent that the author has thoroughly covered the literature, books, and monographs and has chosen important conditions following trauma to be presented in this edition. He also has appended throughout the entire volume a very unusual and complete list of references and has included the most important ones. This is not in a sense a text on traumatic surgery but the presentation and style are easy to follow, the case reports are brief and to the point, and the aim is to present the opinions of reputable and representative writers in condensed form.

This volume is not to be recommended to the student of medicine, but may be recommended without reservation to the busy practitioner as a challenge and to the industrial surgeon and civil surgeon and physician who have much to do with traumatic accidents and who are called upon so frequently to testify in medical legal controversies.

F. M. K.

THE 1938 YEAR BOOK OF PEDIATRICS

Edited by Isaac A. Abt, M.D., professor of pediatrics, Northwestern University Medical School; and Arthur F. Abt, M.D., assistant professor of pediatrics, Northwestern University Medical School. The Year Book Publishers, Chicago. Price, $2.50.

Those physicians interested in the field of pediatrics look forward each year to the publication of this small volume. It contains a concise review of the pertinent literature of the year on the various phases of growth and development, nutrition, infection and diseases in childhood. The terse comments of the author in evaluating certain contributions add greatly to the value of the volume.

In addition to the review of the literature this edition of the Year Book contains two unusually fine articles. Abt reviews the progress which has been made in the study of the endocrine glands, placing emphasis on the action of the hormones on growth and development. William Brown of Aberdeen presents some fifty excellent photographs to illustrate a study of the face and facial expression of the sick child. Both of these articles are excellent and will be of interest to every clinician. D. K.

ENDOCRINE THERAPY IN GENERAL PRACTICE

By Elmer L. Sevringhaus, M.D., professor of medicine, University of Wisconsin. The Year Book Publishers, Chicago, 1938. Price, $2.75.

The author prefaces this book with an apology for its brevity and then in 175 pages gives the

subject of endocrine therapy a thorough airing. Perhaps, as he says, "No attempt has been made to include the numerous refinements which will be of interest to those who give special attention to endocrine diagnosis and treatment," but to the man in general practice the wading is still a little deep.

Beginning with the biologic significance of hormones the author considers first, the pituitary body and then, in turn, each other internal secretory gland, outlining the relationship of each to the anterior pituitary. He follows this with a chapter on each gland giving, in most cases, the essentials of the function, and discussing the diagnosis, therapy, and prognosis of irregularities in function. Diabetes mellitus and obesity receive special attention and are well presented.

The work is carefully indexed for quick reference and is a manual of considerable value in the therapy of some types of endocrine disturbance.

L. E. R.

A MANUAL OF FRACTURES AND DISLOCATIONS

By Barbara Bartlett Stimson, M.D., associate in surgery in the College of Physicians and Surgeons, Columbia University, New York City. Illustrated with 95 engravings. Lea and Febiger, Philadelphia, 1939. Price, $2.75.

This author has condensed the experiences of the large and well conducted fracture service at the Columbia and Presbyterian medical centers of the past ten years into a small and serviceable volume.

Unlike many manuals the printing is large and easily read and the text is well illustrated by many line drawings which amplify the points under discussion. One cannot help but be struck with the lucid description of various common fractures and their usual treatment, including not only the types of dressings which are ordinarily applied but, again unlike most fracture texts, the time that immobilization should be normally maintained. This manual makes no pretense at being a complete text on fractures, but it is by far the best manual of this type which the reviewer has seen. One could wish that every interne in every general hospital possessed a copy and used it often.

A. F. O.

THE TREATMENT OF FRACTURES

By Charles Locke Scudder, M.D., formerly assistant professor of surgery, Harvard Medical School. Eleventh edition, revised. W. B. Saunders Company, Philadelphia and London, 1938. Price, $12.00.

A work which has stood the test of ten editions may well be considered a standard text. However, in twelve years, or since the last edition published in 1926, many changes have taken place in fracture treatment. Dr. Scudder has recognized this fact by making a complete revision of the book, deleting the obsolete and including the new.

Further, having withdrawn from active practice, the author has wisely associated with himself some twenty active practitioners, all teachers, who present in monograph form their particular special problems. The table of contents has been abbreviated but an excellent index probably serves sufficiently for the reader to find his desired facts. The illustrations are plentiful and varied and although one recognizes some from previous editions, many new plates are included, particularly where new technics are described. A very pleasant observation to this reviewer is the fact that a definite sense of New England conservatism is manifest throughout the text. This is particularly gratifying when so many bizarre methods of treatment are constantly presented by enthusiasts whose zeal may overcome their judgment. Dr. Scudder gives space to all the newer types of treatment without allowing himself to recommend anything but what will produce the best possible end results.

This work again stands as the classic in fracture treatment.

D. C. C.

THE NEW INTERNATIONAL CLINICS, VOLUME I, NEW SERIES TWO

Edited by George Morris Piersol, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. J. B. Lippincott Company, Philadelphia and London, 1939.

Each volume of the New Series under the editorship of Dr. Piersol seems to be of higher caliber than the preceding one, presenting a wider variety of papers and clinics of unusual merit. This volume contains a wealth of material for the student of clinical medicine. Chronic brucellosis by McGinty and Gambrell is a thorough review of the present concept of the disease. Garlock presents the surgical treatment of carcinoma of the esophagus, a radical and an unusual surgical procedure. Graham presents an excellent article on the management of duodenal ulcer, and Friedenwald and Morrison discuss the clinical significance of gastro-intestinal hemorrhage. There are two splendid articles on the subject of diabetes, Bowcock emphasizing the diagnosis and Myers considering diet and insulin. There are three contributions to the subject of heart disease. Ashman presents an outline of electrocardiography. The last article by Cantarow is a comprehensive review of the present status of our knowledge of water balance with a discussion of edema and dehydration.

The exceptional merit of this publication should certainly be brought to the attention of every practitioner of medicine.

D. K.

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THE PRESIDENT'S ADDRESS*
PRINCIPLES AND PRACTICE

ARTHUR W. ERSKINE, M.D., Cedar Rapids

Because we practice an art, and only incidentally conduct a business, and because we try to fit our lives and actions to an ancient and honorable code, it is perhaps not surprising that a newspaper once said in its editorial columns, "Doctors have clung to an ancient code of conduct that does not belong in this materialistic age. They have taken inordinate pride in a system of ethics which is as outmoded as it is false." Cynical though we may sometimes try to appear to be, I am sure that in our hearts we all sincerely subscribe to the four fundamental principles of the Hippocratic oath. Those principles, stripped of their classic language, are:

1. I will be loyal to my profession and to my colleagues.
2. I will put the welfare of my patients before my own comfort or my financial security.
3. I will not do harm by attempting the things for which I am unqualified.
4. I will keep the secrets of my patients.

Outmoded? False? I think not; unless sincerity, common honesty, and the principles that guide the actions of all gentlemen are outmoded and false. Nowhere in the oath, nor in the rules governing our conduct, is there any stipulation that those who practice the healing art may not live by it, or that they, any more than other citizens, may not interest themselves in political and social questions affecting the people of their communities.

We sometimes ask ourselves how active a part should doctors take in the formulation, passage, and enforcement of laws dealing with the health of the people and the practice of our profession. It appears obvious that we should concern ourselves with legislation designed to protect the health of the people because, according to the principal tenet of our faith, the welfare of the patient is more important than anything else. Because we are obligated to be true to our calling, we also believe that we can with propriety support legislation designed to protect ourselves.

Without the help of a powerful lobby, and using methods which sometimes seem to be almost too dignified to be effective, the organized medical profession has at various times tried to further the passage of a uniform medical practice act. On every such occasion an immediate complaint of persecution has been made. The ignorant, the unscrupulous, the charlatans, and those who want to become doctors by one of the many available short cuts, sometimes say that we would refuse the privilege of practicing the healing art to anyone, no matter how able or well qualified he may be, unless he agrees to practice as we do, and to use the same systems of treatment that we use. *That is not true, and it never has been true.* Real doctors are not greatly disturbed about the methods used in healing the sick. They do not care if it is done by drugs, by surgery, light, massage, heat, the cracking of spines, the laying on of hands, by suggestion, or by prayer. They do say, however, that anyone who sets himself out as competent to treat disease ought to know something about his business, that he should be familiar with the anatomy, physiology and chemistry of the human body and that he should be able to recognize a disease when he sees it. Surely, those are not unreasonable things to ask. The history of every new school of therapy with any merit has been that where its disciples met equivalent educational requirements they have been absorbed into the regular medical profession. Even though we may consider ourselves the guardians of the health of the people, we should not forget that the final responsibility for its protection lies with the legislature. I wonder sometimes if we do not support or oppose too many measures, and give the public the impression that it is our own interests we are selfishly trying to protect.

There is one badly needed piece of legislation in this state which we can support without any danger of such criticism. I refer, of course, to the

*Presented before the Eighty-eighth Annual Session, Iowa State Medical Society, Des Moines, April 25, 26 and 27, 1939.

need for improvement in the care and treatment of our insane population. The first need is to remove about two thousand incurables from the county homes where they are, under the present law, supposed to be receiving custodial care, but where they are, in fact, in many cases, living under deplorable conditions. All these patients should be placed in modern hospitals where they can receive scientific, humane, custodial care. The second need is provision and facilities for the intensive treatment of those insane patients who can be cured or improved. At present, because of the overcrowding of the institutions, overworked and underpaid staffs, and insufficient appropriations such treatment is often impossible. We should not hesitate to inform the people of Iowa that to attain these objectives it will be necessary to spend a great deal of money. There is almost no way in which we as doctors can better subscribe to those principles to which we all adhere than by using all our influence to secure these reforms. I had hoped that the representatives of the Iowa State Medical Society, the Committee on Public Policy and Legislation, and the Committee on Medical Education and Hospitals, would be able to agree with the superintendents of the various institutions for the mentally ill, the Board of Control and the State Department of Health on a plan to correct the notorious neglect of the insane. I am sorry that they have been unable to come to an agreement because concerted action is needed now on behalf of these helpless people.

We can also properly engage in the education of the public. Medical progress owes much to the cooperation of laymen. The conquest of malaria and yellow fever, the eradication of typhoid fever and the control of diphtheria, smallpox, tuberculosis, pernicious anemia and diabetes would all have been absolutely impossible by the unaided efforts of the medical profession. We had to have the intelligent cooperation and active help of the public. The Cancer Committee of our Society, for example, has two educational functions. It is not only engaged in intensive professional education in cancer, but it also supports the activities of the Women's Field Army, the Executive Board of which is composed of the Executive Cancer Committee together with the Commander of the Field Army. During the past two years more than one hundred thousand cancer pamphlets have been distributed, hundreds of cancer talks have been given, dozens of exhibits have been presented, and a large amount of newspaper and radio publicity has been disseminated. It is impossible yet to determine what effect has been produced, although many physicians have volunteered the information that more patients are presenting themselves with early cancer or with symptoms suggesting the disease. It may be significant that in 1937, for the first time since 1925, the total reported cancer deaths for Iowa were below the number for the preceding year.

We hear much in these days about the threat of socialized medicine and it is true that changes will come, and probably should come, in the methods of distribution of medical service. When most of us started to practice the poor depended almost entirely upon our generosity. We have seen many changes in the attitude of the county, state, and federal governments toward the health of the people and the distribution of medical service. In the last thirty years the prevention, diagnosis and treatment of tuberculosis have become governmental responsibilities, and properly so, because tuberculosis has always been more of an economic problem than a scientific one. Public health activities of the government have been constantly broadened, especially in the direction of prevention of epidemics, the prevention and control of malaria and other communicable and infectious diseases. Campaigns against cancer and syphilis have been financed by the public and the public funds. Workmen's compensation laws, which were, at first, opposed by some medical organizations, have been passed in almost every state. All these changes have not only helped the public but in the long run have directly benefited us. On the other hand, these changes have all been in accordance with the principle that the strong should help to bear the burdens of the weak. The principle is not new. Doctors have always upheld it and have maintained that fees for medical service should be based upon ability to pay.

Now comes the long expected Wagner Bill, formulated to carry out the recommendations of the Interdepartmental Committee. As you know the medical profession has formally approved four of the five major recommendations in that report. We have opposed only one recommendation, which was that a national system of compulsory health insurance be set up to provide general medical care. We have opposed this proposal because we fear that under such a plan the scientific part of the practice of medicine would ultimately be dominated by political expediency. We fear regimentation, not socialization. Instead of setting up a nation-wide compulsory health insurance plan the Wagner Bill provides for federal grants to the states to be expended under whatever plan seems most feasible for the several states. We could have wished the bill to have been a little less ambiguous in regard to the method of its administration and to give a little more assurance that medical problems will be left to medical experts.

If it is passed, and I believe it or a similar one will be passed in response to popular demand, the profession in those states which already have efficient plans for medical relief to indigents administered by medical men will be in the most desirable position. In Iowa, the grants provided in the bill will probably be expended under one of the present plans for providing medical relief to indigents. It will not be difficult to expand our present systems of providing indigent relief to include some of the members of the low income group who cannot now bear the cost of catastrophic illnesses.

A year ago I believed, and I said, that organized medicine held the solution to the problem of providing adequate medical service to the low income group in its own hand. I believed then, and still believe, that organized medicine, by voluntary changes in its methods of practice, adapted to the varying needs of different communities, can avoid unwelcome and detrimental enforced changes. As recommended by our House of Delegates, we should continue controlled experimentation with voluntary health insurance plans and with group hospitalization insurance. We are also committed to experimental expansion of the Iowa plan for medical relief to indigents by county medical societies so that it will include some members of the low income group. It is our function as doctors and as members of the organized profession to see that the new methods of distributing medical care are kept free from political control. If this can be done, and I think it can, we have no greater reason to fear the inevitable coming changes in the practice of medicine than we have cause to regret the changes we have already seen in our own professional lifetimes.

THE PRESIDENT-ELECT'S ADDRESS* A PROFESSION OR A TRADE?

Felix A. Hennessy, M.D.
Calmar

Organized medicine is not a trade union. Physicians are not selling commodities in competition with other merchants. They are not merchants of health, selling cures, or formulae, or medicines, or instruments. Physicians are professional men giving service for which they may or may not be paid, and they must expect to give it regardless of fee. They are the privileged servants of the sick, and being obligated by an oath, should carry themselves on loftier planes than those who buy and sell for profit.

However, the finest ideals will not propagate themselves. In organized medicine we have the happy combination of ideals plus organization. Individuals may worthily desire to serve and build, to imbibe deeply of friendliness, tolerance and understanding, but alone they fail to impress the armored hide of indifference, selfishness, hate and bigotry. With an organization of men similarly imbued with and fortified by an exchange of ideas, mutual helpfulness and a splendid association which marshals for him an array of leadership, experience, facts, and literature, and binds all together in a perfect union, the individual becomes an integral part of a great altruistic force for human good. We are a great body with maturing obligations and of recognized importance in the counsels of the country. We may be proud of the past, but we grow with the years. We think of the fine and outstanding achievements of a glorious past, but we consecrate ourselves to a larger future of helpful service to humanity.

The United States owes an incalculable debt to the American Medical Association. Whatever criticisms may now be aimed at it by the idealistically-minded who are shocked at obvious imperfections in the medical services available to the people as a whole, the fact remains that the organized profession itself, voluntarily and from a sense of duty, is responsible for about everything "social" in the practice of the healing arts today. It found American medicine in a chaotic condition. There were essentially no minimum standards of education or of competence. In most states a few years as helper in a doctor's office or around a hospital and the passing of a written examination were sufficient to launch a man on the practice of medicine. The American Medical Association has worked ceaselessly for higher and higher minimum requirements. It has practically eliminated low-grade medical schools. It has made the acquiring of a doctor of medicine degree and a state license to practice a major struggle for any man and a hopeless struggle for an individual of mediocre intelligence. The public now is absolutely assured that any man who has been graduated from an American medical college and passed a state board examination is highly competent. It is reasonably assured that he is not lazy or careless, unless his personality undergoes a remarkable change after he leaves college; and it is reasonably assured that he is not a scoundrel, for dishonesty could hardly get through the filter of present-day medical education, for which the American Medical Association is responsible.

It has waged a strenuous fight to eliminate quackery. Contemptuously defiant of slander and libel suits, it has mercilessly exposed the nonsense

*Presented before the Eighty-eighth Annual Session, Iowa State Medical Society, Des Moines, April 25, 26 and 27, 1939.

of healing cults and alcohol-and-water nostrums. It probably would have succeeded altogether, were it not for the obstacles thrown in its way by politics. Through its local units it has rigorously punished, by censure and by expulsion, violations of medical ethics. All of these efforts have been valuable measures moving toward better public service without sacrificing the physician to bureaucratic domination.

Individualism has been sneered at by groups which are struggling for warm places in snug bureaus, but after all is said, and after studying all of the European service plans which employ more lay managers than physicians, which pay clerks more than doctors, we must pay tribute to the best traditions in this country which are based upon the individual care of the sick by the individual physician.

Two widely antagonistic forces are striving for dominance in America. On one side is the desire and ambition of the individual to live his own life, to carry his own responsibilities, and to secure the utmost mental and material development. On the other side is the ambition to have the people subjected wholly to herd ideas, whether advantageous or otherwise, with only an inner certitude that the way the herd is directed is also the best way. The contest is between individuality and regimentation, and while regimentation with its attendant oppression has secured high place among decadent nations of Europe, it should be fought bitterly in America, which has grown great through private initiative. Regimental control might produce more work per day from a gang of brick layers but it could never be applied to a professional group without disastrous results. Yet we are advised to turn from the system of private practice to some form of socialized or state medicine; to follow the lead of Germany and England. We crossed the ocean once to get away from the lead of European countries, and by adopting different customs and laws, built here the greatest civilization in history.

The beneficiary of socialized or state medicine receives medical care, not complete under most systems, and cash benefits when he is sick and not able to work. Since his doctor bill is always paid, he is supposed to feel very free about consulting the doctor. That is one of the strong points urged in favor of the system. There may be some defects in that theory which would not become apparent until tried, but the point of interest is this: does socialized medicine provide better medical care than is provided by the system of private practice? If it does, if under it, prevention of disease is better carried out, early diagnosis promoted, morbidity reduced, mortality rates from disease lessened and the span of life more rapidly lengthened, then it would be fair to conclude that our system of private practice should be replaced by one of the systems of socialized or state medicine. Let us examine these points in detail.

It is conceded that the beneficiaries of socialized medicine consult the doctor in very large numbers; it is also conceded that the majority of them seem to have minor and imaginary ills, and that a surprisingly large percentage of them consider themselves too sick to work, and, therefore, entitled to draw sick benefits during their period of disability. The cash benefits paid during sickness sometimes place a severe strain on the treasury, and lead to investigations by the business department of the system, which are a source of much trouble, not only to the doctor but to the person who feels entitled to the benefits. It is sometimes considered necessary to send out the consultant of the business department to see if the doctor in charge can be persuaded to cut off some of the beneficiaries, and the business department usually has ways of doing this in spite of the judgment of the doctor in charge of the case. In the United States, under private practice, the industrial worker loses from eight to thirteen days a year from sickness; in Germany, under socialized medicine, the industrial worker loses from fifteen to thirty days and he is supposed to be the chief beneficiary of socialized medicine.

Recently, Dr. Frederick L. Hoffman, statistician for the Prudential Life Insurance Company of New York, and probably the outstanding medical statistician in the world, made a comparison of the mortality rate of some of the leading causes of death in England, which has a system of socialized medicine, with the mortality rate from the same diseases in the United States, which still has a system of private practice. In England the death rate from tuberculosis of the lungs is 63.5 per 100,000; in the United States it is 51.2 per 100,000. In England the death rate from cancer is 156.3 per 100,000; in the United States it is 106.3 per 100,000.

Politics enters more or less, often more, into the management of socialized medicine. It does not promote the practice of preventive medicine. Its diagnostic service is inferior, and the morbidity rate is greatly increased. The mortality rates from nearly all of the important diseases are greater than under private practice.

Under the system of private practice as it exists in this country, there is one other feature which, in the opinion of most doctors and most patients, adds greatly to the service rendered; that is, the personal relationship which exists between the

doctor and the patient. It has become fixed in the customs of our people and it will continue until changed or destroyed by law. One well trained doctor may be as able as another to apply the truth of science in the treatment of disease, but times come in the life of each one of us when the cold facts of science do not avail. The personal side of the private practice of medicine, which has always played an important and comforting part, steps in at such times and renders a service which the people not only desire but demand. Sympathy, kindness, pity, and cheerful hope—no amount of scientific efficiency can take the place of these in the dark hours of sorrow and trouble so common in the experience of all. I would not belittle the importance of science in medicine. I bow in humble reverence before its beneficent power; nor would I magnify the personal element, yet many of us know from experience what comfort, hope and assurance the personality of a trusted physician may bring to the bedside of his patient. President Eliot of Harvard has said: "In these intangible things are found the durable satisfactions of life; fame dies and honors perish, but loving kindness is immortal."

Socialization tends to destroy personal service; it places all of the emphasis on the scientific side, and while the scientific side is the greater, yet divorced from the personal element, it is immeasurably weakened. Our system of private practice blends the two into one service, and thus the medical care received by the American people is the envy of the rest of the world. In no other nation has medicine wrought so well in bringing health and happiness, and length of days to the fleeting span of life. America is now leading all other nations in the extent and quality of her medical research. Perhaps this is due to the fact that physicians in other countries have not the time to carry on such work. The profession is not fighting socialized medicine to preserve its own existence. It is fighting to keep the hands of the politicians from controlling the practice of medicine to the detriment of the health of the American people. It is fighting to prevent a gross bureaucracy from wedging itself between doctor and patient.

The politicians are supposed, in theory, to keep their hands off the business and professional setup of socialized or state medicine, but where they vote a considerable part of the money to pay the expenses of the system, they are naturally interested in the management. Sometimes they take considerable interest in it. In one European country, several thousand doctors have been deprived of the privilege of practicing medicine for the state because they incurred the displeasure of the political powers. Politics is intimately bound up with the administration of socialized medicine in all cases where the state is called upon to pay large sums of money for its support, and no one should expect it to be otherwise. The state cannot manage without commanding, and it will happen, therefore, when the state assumes authority, that our profession will fall under the thumb of the politician. Dictation to the doctor by lay boards in certain medical institutions is bad enough, but such dictation becomes insufferable when exercised by self-seeking ward heelers and ruthless political organizations.

A recent medical writer has well stated, "Today medicine stands at the crossroads, one road leading directly to state medicine, and the other to some form of our present method of practice modified to meet present-day conditions." What road shall we take? The hesitant doctor looks back upon the long uphill road which he has climbed, he looks ahead and sees only more difficult heights, he looks down into a valley of indecision. Will he slip into decadence or will he become a fighter for whatever he thinks is right?

The relation of the physician to society assumes acute importance in the presence of experimentation under the aegis of social security. Extraordinary political changes in every part of the world, reversion in many countries from democracy to autocracy, tendencies to centralization of authority in the United States, and submergence of the individual in mass movements, cannot fail to disturb practitioners of medicine who have been developed under the American tradition. American physicians must assume social leadership if they would avoid the rôles of pawns in the hands of those who are playing the games of political strategy.

American physicians face problems which, seemingly new, are almost invariably old enemies in new clothes. Old world experience should be studied by the lamps of history and lessons applied by intelligent, militant physicians who are willing, if necessary, to become crusaders. Physicians will become effective only when they stand upon their own solid ethical foundations, and become civic-conscious.

The medical profession should not pursue a policy of ignoring the signs of the times. We should study the social, economic and civic situations in all of their relations to the practice of medicine. The subject should be approached in an ethical manner and a well thought out plan evolved to guide the profession in readjusting the physician to the new age in which we are living. National, state, and county leaders should plan

constructive leadership in order that the rights of the individual physician may be safe-guarded, the public protected, and the high ideals that have guided the conduct of our profession in the past, preserved.

How can we of the medical profession solve these problems? I think the answer lies in thorough organization. As individuals we can accomplish nothing. During the coming year I intend continually to stress the importance of organization, and careful consideration of the problems that confront the medical profession. Let us develop a spirit of comradeship among our members. Let us throw away some of the intense individualism which has, in the past, encased the average physician in a shell of self-sufficiency. Let us encourage teamwork among our members and each member do his part to the best of his ability.

You have honored me by naming me as your executive officer for the ensuing year, and I feel that it *is* an honor. I hope I will be able to live up to your expectations. If I fail, it will not be without an honest effort. May the Iowa State Medical Society go forward in its mission to hold high the torch to guide the medical profession of our state along the road of honor and professional achievement to a greater destiny in the days that lie before us.

A RATIONALE FOR THE MANAGEMENT OF HEART DISEASE*

THOMAS J. DRY, M.B.,

Section on Cardiology,
The Mayo Clinic, Rochester, Minnesota

It is proper to speak of "management" of heart disease because with few exceptions the pathologic changes underlying cardiac disease are not only irreversible but also progressive. Thus, in a large proportion of cases the crucial problem of therapy resolves itself into an adaptation on the part of the patient to a mode of living suited to his cardiac disability rather than into specific measures which can in any sense of the word be termed curative. It is often possible to obtain dramatic results in the treatment of congestive heart failure, especially since the mercurial diuretics have come into use, but it is well to remember that the mechanism originally responsible for the congestive heart failure is still present and that recurrence is possible under even less provocation than was required in the first instance.

In certain instances, however, an extracardiac mechanism such as that associated with obesity, hyperthyroidism, severe anemia, or avitaminosis may add its effects to already existing cardiac disease. Since these last named entities are amenable to treatment by virtue of the fact that they are essentially reversible in nature, the outlook becomes much brighter when they rather than some irreversible condition are present as complicating factors in cardiac disease. In recent years, also, the diagnostic criteria of constrictive pericarditis have been defined sufficiently well to permit its recognition clinically, and while it necessitates the somewhat drastic surgical procedure of pericardectomy for its relief, the results are at times very gratifying.

The pathologic processes eventuating in heart failure happen to be relatively few in number. Congenital defects, rheumatic fever and its sequelae, syphilis, hypertension and coronary sclerosis comprise almost the entire list. Each disease has its own natural life history and mode of behavior and it is essential to be acquainted with all its phases in order to treat correctly the situations as they arise. However varied their rate of progression may be, these diseases in common result in an encroachment on the cardiac reserves with impairment of the heart's pumping efficiency. This occurs because of direct myocardial damage or, secondarily, because of interference with its nutrition through involvement of the coronary arteries. Valvular and other mechanical difficulties, such as hypertension, add their quota to the load which the heart must carry. Finally, the onset of an ectopic rhythm usually adds considerably to the embarrassment of the cardiovascular apparatus.

For convenience of description, therefore, we can discuss the treatment of heart disease under two headings: first, the management of congestive heart failure due to any cause; and second, the management of cardiac states which will tend to lead to congestive heart failure or to other cardiac emergencies.

THE MANAGEMENT OF CONGESTIVE HEART FAILURE

What course of events leads to congestive heart failure? Expressed in simple terms, the heart is no longer able to expel the blood which is brought to it. As an inevitable consequence the venous system becomes engorged and when venous pressure reaches a certain level, fluids escape from the vascular system into the tissues and later into the serous cavities. One of the immediate consequences as far as the heart itself is concerned is anoxemia, which adds greatly to the difficulty. Metabolic disturbances, about which we unfortunately know very little, undoubtedly play an important rôle in the failure of cardiac muscle. The

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sequence of events which occur when the strain is primarily on the left side of the heart, as in hypertension or aortic disease, differs in certain details from those which occur when the strain is primarily on the right side of the heart, as in mitral stenosis or certain congenital defects. However, failure predominantly on one side leads eventually to failure of the other, so that we can regard the heart as a functional unit and treatment is essentially the same in any case.

Treatment consists, first, in reducing cardiac work to an absolute minimum, which means complete rest, physical and mental. All the means at one's disposal should be resorted to in order to insure such rest. In the earlier phases of treatment the opiates surpass in usefulness all other forms of sedatives. It is highly essential to offer some reassurance to the patient and to the relatives. By explaining the objectives aimed at in simple terms with warranted optimism, some of the uncertainties can be allayed and better cooperation obtained. The second phase of treatment should be directed toward eliminating fluids that have accumulated in the form of edema; thereby the peripheral resistance against which a crippled heart has been working is lowered. The diuretics in common use for the relief of congestive heart failure will be considered presently. At times it is necessary to remove by paracentesis large accumulations of fluid from the peritoneal and pleural cavities, after which diuretics often act more efficiently than otherwise would be the case. The intake of fluid must be controlled and the content of salt in the food must be low. The degree to which the intake of fluid should be limited is stated often in terms of a definite amount. This is a very unscientific practice; first, because the fluid requirement varies not only from one individual to another, but also from day to day; and second, because dehydration is possible even if the subcutaneous tissues are edematous. Among some old patients especially, improvement fails to occur unless fluids are administered. The patient complains of thirst and of a dry mouth; the retained fluids obviously are not supplying the water necessary for metabolic activity. In the case of a cooperative patient who has been given an opportunity to understand what the physician is trying to accomplish, the sense of thirst is the best guide in determining the proper intake of fluid. The patient need merely be instructed to drink the smallest amount of fluid which will satisfy his thirst. A record should be kept of both intake and output of fluids and if the ingested amount proves to be excessive, further admonition can then be resorted to.

In view of the satisfactory results obtained with the use of diuretics, it is neither necessary nor wise to attempt elimination of fluids by catharsis. Appropriate amounts of mild laxatives, such as mineral oil or milk of magnesia, should be given to keep the stool loose enough to make it possible for the bowels to be moved without undue straining.

A third means of treatment is venesection which occasionally can be resorted to with advantage when venous congestion is very great. In order to derive any benefit from this procedure, however, a sufficiently large amount of blood (300 to 600 cubic centimeters) must be withdrawn rapidly, because the venous system soon refills by absorbing fluids from the edematous tissues.

Measures intended to improve the myocardial status.

Oxygen. In most instances the measures already mentioned will suffice. In the severe forms of failure, oxygen will help to give relief more quickly than would otherwise occur. The recent improvement in the technic of administration of oxygen makes this a practical and relatively inexpensive adjunct to cardiac therapy. The psychologic effect, however, which this form of therapy has on the layman, must not be disregarded, since it has been customary for so long to associate oxygen with the gravest forms of illness.

Glucose. Glucose plays an important, although not clearly understood, rôle in the metabolism of heart muscle. There is unquestionably an added demand for glycogen when heart failure is present. It can be administered intravenously in a 10 to 25 per cent solution, in amounts varying from 300 to 400 cubic centimeters or more concentrated solutions may be administered in smaller amounts, when it sometimes enhances the effects of other diuretics. It has a definite place in the treatment of the severe forms of coronary sclerosis and in such cases it will at times relieve paroxysms of dyspnea when all other measures have failed.

After all evidences of congestive failure have disappeared, the program consists essentially of a gradual rehabilitation on the part of the patient to a level of living which is within the limits of his cardiac reserve. This will be discussed more fully under the heading of management of cardiac states which may lead to cardiac failure.

DRUGS USEFUL IN THE TREATMENT OF HEART FAILURE

A great many preparations have been used in the treatment of cardiac disease. Many of these have been a boon only to the drug houses which manufacture and advertise them. It is perhaps

a wise policy to confine one's attention to those drugs which have withstood the test of time and clinical experience.

Digitalis. Digitalis is indicated in any form of heart failure except that which occurs after acute coronary occlusion. By increasing the tone of cardiac muscle, digitalis increases the amplitude of ventricular contractions. The improvement in the general circulation which results, accounts for its diuretic effects. Its most dramatic effects, however, are seen in cases of rapid auricular fibrillation, by virtue of the depression of conduction especially through the auriculoventricular bundle (His). This action is partly due to vagal stimulation and partly the result of a direct effect on the conduction system. In most cases oral administration of one of the preparations of the powdered leaf is entirely adequate; in cases of severe failure, especially when nocturnal dyspnea is a prominent symptom, four to six cat units of a suitable preparation may be given intramuscularly when the patient is first admitted. This may be repeated on the next day, or the remainder of the digitalizing dose may be given orally. In any event, unless digitalis had been given previously, the digitalizing dose usually corresponds roughly to the number of cat units equivalent to one-tenth of the body weight in pounds. However, it is important to individualize and to avoid amounts that will produce toxic symptoms. Old individuals are more susceptible to the drug than young people. When what seems to have been an adequate amount of digitalis fails to reduce the ventricular rate in cases of auricular fibrillation, it is wise to look for evidences of hyperthyroidism. A coupled rhythm, marked bradycardia, nausea and vomiting constitute the earlier evidences of digitalis intoxication. The maintenance dose of digitalis varies from six to nine cat units per week and often is best tolerated when given on two or three consecutive days of the week; but again, in such cases, individualization is necessary. A period of four to five days should elapse between initial digitalization and the commencement of the maintenance program.

Diuretics.

The mercurials. The mercurial diuretics surpass all other drugs in their diuretic effect. They act rapidly and yet are relatively nontoxic. One important contraindication to their use is renal damage, but it must be recalled that albumin, casts and erythrocytes frequently are present in the urine due to congestive heart failure itself. Salyrgan and mercuropurin are the most commonly used mercurials at present. They are best administered intravenously unless there is difficulty in securing a suitable vein; under such circumstances the intramuscular route is used. Sloughing occurs only when the solution escapes in the superficial subcutaneous tissues, especially if these tissues are edematous. A needle of small bore is much safer for intravenous administration than one of large bore, since use of the former minimizes the possibility of causing a leak through the punctured vein. The injection may be repeated at intervals of two to three days, the initial dose being one cubic centimeter and thereafter two cubic centimeters. It is seldom necessary to use more than two cubic centimeters. The best method of gauging the success of therapy is to determine the loss in the patient's weight, as well as to record both the intake and output of fluids. It is frequently noted that diuresis still continues after injection of mercurials when clinical signs of congestive heart failure have disappeared. Indeed, these diuretic agents are used to great advantage in cases in which cardiac reserve is known from the symptoms to be diminished but in which it is not possible to elicit actual signs of congestive heart failure. Every so often a patient belonging to this category will eliminate three or more liters of urine in the succeeding twenty-four hours; this indicates that congestive heart failure is actually present. This is also true in cases which are being followed after congestive heart failure has been controlled. The use of suppositories containing mercurial diuretics is effective, but suppositories seldom are indicated since the methods already described are far superior. Moreover, if the patient is instructed to use suppositories in his own home, he invariably neglects to administer them soon enough when failure returns. In fact, it is false economy for the patient to break the routine of regular visits to his medical adviser. The intelligent use of the measures so far considered, either individually or in combination, will suffice for many patients who are in or have passed through an episode of congestive heart failure. At other times supplementary means are necessary to obtain the same success in treatment.

The acid-producing salts. Acid-producing salts have received wide application and often they are employed routinely in conjunction with the mercurial diuretics. Used alone, acid-producing salts may be effective in mobilization of fluid, but their action is less certain and less dramatic than that of the mercurials. It was thought that acid-producing salts effected a diuresis by virtue of the fact that they cause a shift in the acid-base equilibrium toward the acid side. Ammonium chloride and calcium chloride found their application on this basis. As a matter of fact, the bio-

chemical principles involved in the use of these so-called acid-producing salts are very complex, and factors other than those pertaining to the acid-base equilibrium are involved. Thus, Keith and Binger have shown that the acid radicals themselves have specific diuretic properties and that this is particularly true of the nitrate radical. Again, it should be pointed out that the cation as well as the anion may be of importance in diuresis. The cation, potassium, has been found to be absorbed readily from the intestine, to disappear quickly into the tissues and to be excreted rapidly by the kidney. This is not true of the cation sodium. For these reasons potassium nitrate and potassium chloride recently have replaced ammonium chloride as a diuretic. It would seem that the more nearly normal the blood chemistry, the more likely it is that diuretics will be effective. When the concentration of chlorides is low or when an alkalosis is present, ammonium chloride or potassium chloride might give better results than potassium nitrate, and after the acid-producing salts have been used the mercurial diuretics often are far more effective than when the mercurial compounds are used alone. The use of the so-called acid-producing salts is not therefore a haphazard matter and is greatly facilitated by the determination of the level of chlorides and the carbon dioxide combining power of the plasma, and if ammonium chloride is used, the concentration of blood urea. The amount of these substances administered must be comparatively liberal in order to produce diuresis. Usually two to three grams in enteric coated pills are given three times daily.

The xanthine group. The xanthine diuretics have enjoyed for long the reputation of being vasodilators and diuretics. The former action has been questioned seriously[2] and the latter is not in any way comparable with that of the diuretics which already have been considered. Theobromin sodium salicylate (diuretin), theobromin with sodium bicarbonate, theophyllin, theocalcin and aminophyllin are some of the xanthine derivatives which have received wide application in the treatment of congestive heart failure as well as of coronary sclerosis and hypertension.

The Management of Cardiac States Which May Eventually Lead to Congestive Heart Failure or to Other Cardiac Emergencies

At this time, a variety of cardiac states of different origin can be discussed conveniently, since their management is essentially along the same general principles. This group is found among patients whose hearts are compensated but who harbor disease which may eventuate in congestive heart failure or other cardiac emergencies, such as the occurrence of coronary accidents, embolic phenomena, or the onset of an ectopic rhythm. It includes those patients who previously have had congestive heart failure. I have special reference to individuals who have rheumatic heart disease, congenital cardiac anomalies, hypertension, cardiovascular syphilis or coronary sclerosis with or without the anginal syndrome. In short, I refer to a group of individuals who are faced with the problem of living within the limit of their cardiac reserve. A large proportion of these patients are still in their productive years and in the case of rheumatic and congenital heart disease the problem may extend into advice regarding the choice of a means of livelihood and a choice of particular forms of recreation. Among old individuals, the disease involves, in many instances, an entire change in established habits of both work and play. Although such patients are considered as a group, it is obvious that individualization is essential.

One of the first principles to recognize is that in such cases one is treating not only a disease but also a human being. Whatever program is outlined must at least be practical and reasonable, not minimizing, of course, the necessity of certain definite sacrifices which must be made by the patient. The simplest way out of the difficulty in established or even suspected heart disease would be to warn the patient to be careful and to adopt the attitude that everything is up to him. To quote Sir Thomas Lewis; "A medical man who fails to warn relatives of a possible sudden ending may be a little blamed if and when the event occurs, but a doctor who sets out to safeguard himself against all risks of this kind, deliberately prefers his own to others' interests. Death without warning disturbs a patient's family enough; its long, and often unnecessary, anticipation inflicts more suffering."

The necessary facts which the patient should know about his heart disease and about the nature of cardiac function in general, usually can be explained in simple language without the technical terms which to him have only an ominous meaning; it is on this understanding alone that we can depend for cooperation. One's survey of a case must be complete enough to allow the giving of advice to the patient about specific events in his daily life. The most important points for consideration in this regard relate to the following subjects.

1. Exercise and rest. The heart is a muscular organ and like all muscles it requires a certain

optimal amount of exercise: in this case it requires the amount of exercise which does not produce dyspnea, or in the case of coronary disease, which does not produce pain. When patients are convalescing from rheumatic fever or coronary thrombosis, additional criteria are employed in determining the amount of exercise to be allowed, depending on the stage of convalescence. The responsibility is thus placed on the patient, but he also is acquainted with the danger signals so that he can recognize them and be guided by them without the element of fear being introduced. There should be a period of rest during the day, usually after the noon meal, its duration depending on the state of the cardiac reserve. A good night's sleep must be ensured and a suitable sedative should be resorted to whenever and as often as is necessary. Due consideration must be given to suggestions which will help to develop habits conducive to relaxation, and for this a knowledge of the patient's previous habits is essential.

2. Diet. The patient should be disillusioned regarding any curative value which he may, and is likely to, attribute to dietetic measures. The most important instruction regarding diet is that large meals should be avoided, since a full stomach considerably augments cardiac work. Salt tends to increase any tendency toward the formation of edema; thus there is a good reason for limiting salt and for advising against the use of seasoned foods in general. The intake of protein should be moderate because of its specific dynamic action, but the metabolic requirement of the body must be supplied and this consists roughly in one average helping of meat a day. So must all other metabolic requirements be met, including the necessary vitamins, but excessive amounts will not bring added results unless a state of hypovitaminosis is actually present. The treatment of obesity must not be neglected.

3. Habits. Moderation is the keynote regarding habits in general. Alcohol intelligently used in medicinal doses may be helpful in many cases of coronary sclerosis.

4. Intercurrent infections. Congestive heart failure frequently follows otherwise trivial intercurrent infections and patients should be instructed to stay in bed during such illnesses.

Our efforts will be rewarded well and our results of therapy will be very successful if we can cultivate in our patients the right attitude toward their disability. The dramatic nature of heart disease inherently instills fear into the patient and his relatives, but in most instances it is possible by the correct approach to prevent the development of a neurosis which at times becomes disabling out of all proportion to the severity of the disease which is present.

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COARCTATION OF THE AORTA

REPORT OF A CASE WITH RUPTURE DISTAL TO THE CONSTRICTION

JOHN T. HECKER, M.D.
Cedar Rapids

Coarctation of the aorta and congenital stenosis of the aortic arch are synonymous terms. The term, coarctation, first used in French[1] and later in Latin to designate this condition, takes its derivation from co-cum (together) and arctare (to make tight)[2]. In essence it has come to mean a narrowing of the descending aorta distally to the origin of the left subclavian artery and in the region of the attachment of the persistent ductus arteriosus or ligamentum Botallo. The condition has been described[3] as far back as 1789 by Paris although some priority has been assigned to Morgagne in 1760.

Coarctation of the aorta is a comparatively rare condition. Blackford[1] states that it occurs in about one out of every 1,550 autopsies. Fawcett[4] observed eighteen in 22,316 autopsies from Guy's Hospital, none of which had been diagnosed in life. Abbot[5] collected 200 cases from the literature in which twenty-one had been diagnosed during life. Evans[6] found twenty-six cases in 19,217 routine autopsies, performed in London Hospitals, which would give an incidence of about one in 740. However, in a study by Sangster[7], of in-patients admitted to the Adelaide Hospital, Australia, from the year 1925 to 1936, only one proved case was found, although the diagnosis was suggested in another by the roentgenologist. Since the in-patient admissions to this hospital run about 10,000 per annum, the frequency with which it is recognized or occurs can be judged.

This condition has a curious predilection for the male sex, affecting it about three times as frequently as the female.[5] There seems to be no hereditary influence, although Walker[8] reports one instance where it occurred in a father and son.

Abbot[5] has shown that the age incidence, or rather the age at which the patient dies, is usually in the second, third, or fourth decades. Seventy-eight per cent of those affected die in this period, although they are seen in other extremes of life. King[9] states that the condition may occur at any

age after birth and that the "critical" ages are in early infancy and during the third decade. Many die during this first critical period when the collateral circulation is being formed, while in the second period the cause of death seems to be myocardial strain. If they survive this second strain they seem to do well and may go on to an old age. The author reports a case of a patient sixty-two years of age, and one ninety-two years of age is recorded in the literature.[5]

CLASSIFICATION

Bonnet[7] in 1903 classified this condition into infantile and adult types. The infantile type included those in which there was demonstrated a diffuse narrowing of the aorta between the origin of the left subclavian artery and the ductus arteriosus. This type, representing a persistence of the intra-uterine circulation, is accompanied by a patency of the ductus arteriosus and is incompatible with life. The atresia may be of such a degree that the circulation of the lower half of the body is maintained via the patent ductus arteriosus, making the descending aorta appear as though it were a continuation of the pulmonary aorta.

The adult type has no counterpart in normal intra-uterine life. At times there is a sharply constricted lumen, often appearing as though the aorta had been tied off with a ligature at that point. Above this constriction the aorta bulges,[3] giving an hour-glass appearance to the vessel. In less severe cases the narrowing is more gradual. Internally, the narrowing may be accentuated by folds or a septum stretching across the remainder of the lumen either closing or narrowing the aperture. Not infrequently this opening will admit only a bristle or small wooden applicator, as in the case here reported. This constriction in the aorta is at a point not far removed from the attachment of the ductus arteriosus, occurring at the attachment or at either side of it.

Evans[6] adopted a different classification dependent upon associated or compensatory developmental lesions. He has allocated each case to one of the six classes on the basis of the following data:

1. The site, nature, and extent of the constriction.
2. The condition of the aorta proximal to the site of the stenosis.
3. The patency or degree of stenosis of the ductus arteriosus.
4. The relationship between the systemic and pulmonary circulation.

PATHOGENESIS

Very little is definitely known concerning the etiology of this condition. However, there are two important theories: the older, or Skodaic theory; and the newer, or faulty developmental theory. Graige (according to Abbot)[3] in 1841 felt that the obliterative process going on in the ductus arteriosus had possibly been prolonged into the aorta, resulting in constriction. This theory, under the name of the great Skoda, who lent it support, has continued, although some have been unable to find any fibers extending from the ductus into the aorta, nor did they feel that it explained those cases lying at some little distance from the constriction. Abbot[5] and Blackford[1] both believe that there is delayed involution of the distal end of the left sixth aortic arch and the aortic wall at the entrance of this, the distal end of the fourth left arch. This occurs at the junction of three primitive arches.

CLINICAL DIAGNOSIS

The clinical diagnosis is based on fairly well established criteria. The early clinical syndrome was that of:

1. Collateral arterial circulation.
2. Pulsation in the interscapular area.
3. Dilated intercostal arteries.
4. Murmurs over anastomotic vessels.
5. Discrepancy between the size of the pulse in the arm and that of the legs.

Abbot believes that numbers 1 and 5 of this syndrome are pathognomonic, to which she has added diminution of the femoral pulse.

However, we do not find a constant picture in all cases. MacKenzie[16] and Flexner[15] find the three following groups:

1. Those in whom symptoms are absent and the condition is diagnosed at autopsy.

2. Those in whom symptoms occur as a result of an added heart injury, such as endocarditis, overtaxing the circulatory apparatus which has successfully maintained a compensatory mechanism and manifesting its presence with symptoms such as flushing of the face, profuse sweating in the upper part of the body, headaches, tinnitus, and dizziness, all of which can be associated with hypertension in the upper extremities, head and neck. At the same time, or independently, circulatory insufficiency and intermittent claudication of the lower extremities are often present. In this group sudden rupture of the heart, aorta, or vertebral arteries occurs.

3. Those in whom symptoms are present throughout life. These symptoms are usually of myocardial failure, such as breathlessness on ex-

ertion, coldness of the lower extremities, headaches, and cramps in the legs, which often result from secondary valvular disease.

SIGNS

Those afflicted are usually robust, rather plethoric looking, athletic, young individuals with good musculature and with above average intelligence. A curious disparity is frequently noted between the upper and lower part of the body in that the nutrition and power are better above but still good below. Not infrequently, enlarged, pulsating vessels may be seen and felt in the neck and also about the scapula, in the intercostal spaces, and over the abdomen.

The pulsation of the abdominal aorta is diminished; and in the femoral, popliteal, dorsalis pedis, and posterior tibial arteries it may be so faint as to be no longer palpable. The blood pressure in the arms is usually increased while it is decreased in the lower extremity. Normally the femoral pressure is 20 to 40 milligrams of mercury higher than that in the brachial. Here there is a reversal of pressure. A retarded or absent pulse in the lower extremity in the presence of a full bounding pulse in the upper extremity is diagnostic, providing embolism of the iliac artery is ruled out. With this diminution in circulation it is not at all surprising that Shapiro[17] could demonstrate a lower temperature in the lower extremities which was even perceptible by touch.

The loud, rough, systolic murmur over the parasternal and aortic region, often postsystolic in time, may be produced, in three-fourths of the cases,[11] by the hypertrophy of the heart accompanying the hypertension, or it may be due to the current in the enlarged thickened internal mammary arteries.[12] The electrocardiogram may show a left ventricular preponderance before left ventricular hypertrophy can be shown.

The roentgen findings have, in recent years, come to the foreground in aiding the clinician in making his diagnosis. Those findings which are pathognomonic are:

1. Defects or breaks in the continuity of the aortic arch in its descending limb shown in a film taken in the left oblique position. These are called "dimpling."[11]
2. Erosions of the ribs,[10] which are bilateral and usually multiple. This involves the posterior portion of the ribs as far forward as the posterior axillary line in either a faint smooth curve or in a deep curve along the inferior margin of the rib, but never a rough or angular sulcation. There is no other alteration of the rib, no evidence of new bone formation, nor any pathologic fracture.

The less diagnostic findings are:

1. Absence of the aortic knob.
2. Left ventricular hypertrophy (with blunt apex) in seventy-five per cent of the cases.
3. Dilatation of the proximal portion of the aorta in fifty per cent of the cases.
4. "Penciling out" of the bifurcation of the trachea when the film is taken in the left anterior oblique position.[7]



Fig. 1. The deep epigastric artery, as it lies on the dorsal surface of the rectus abdominus muscle and courses upward to anastomose with the internal mammary artery, is very large and tortuous.

COLLATERAL CIRCULATION

"The metabolic needs of the integral parts of the body determine their circulatory supply of blood and the cardiac output responds to this demand."[10] With the circulatory supply impaired in the descending portion of the aorta the need arises and a collateral circulation is the result. This collateral channel may be manifest by:

1. The presence of pulsating tortuous dilated peripheral vessels which transmit a systolic or postsystolic murmur and, frequently, a fine accompanying thrill over the areas occupied by the main and terminal branches of the subclavian artery and appearing where no such vessels are normally seen.[5]
2. Occasionally a systolic murmur or a thrill may exist without any visible or palpable

evidence of enlarged anastomotic vessels where such vessels lie deeply or are screened by some bony structure.

These collateral channels are several in number. The most important is the anastomosis of the subclavian artery with the first aortic intercostal arteries via the superior intercostal artery. Then there is also the anastomosis with the first four aortic intercostal arteries via the posterior scapular branch of the transverse colli artery which is, in turn, a branch of the thyrocervical trunk arising in the first part of the subclavian artery. Still another course from the subclavian artery to the aortic intercostal arteries is via the super scapular, the transverse cervical, and dorsal scapular on the dorsal surface of the scapula, which are frequently visible and palpable and which send perforating branches to the upper aortic intercostal arteries. Another important channel is the anastomosis of the internal mammary artery with the aortic intercostal arteries, and with the deep epigastric branch of the external iliac artery. Many of these anastomotic channels are dilated, tortuous, and circoid. This is observed in the author's case.

Uncertainty is the keynote in the prognostication of this condition. Those who survive infancy and pass on to adult life are subject to so many complications that it is impossible to give a favorable estimate as to the probable duration of life. Some have continued a normal, active life of manual labor. One patient has been reported to have reached the age of ninety-two years,[5] while the patient in the author's case lived to the age of sixty-two years. However, the liability of complications is in proportion to the degree of stenosis.[6] Seventy-eight per cent die in the second, third, and fourth decades of life.[15] Myocardial failure in itself and as a pre-disposing factor to intercurrent infection, and hypertension of the upper circulation leading to aneurysmal dilation of the terminal arterioles of the brain, with resulting apoplexy, are important findings for prognosis.

Abbot[5] reported 200 cases: twenty per cent with a spontaneous rupture of the heart or aorta, two per cent with rupture of mycotic aneurysms of the aorta, five per cent with mycotic endarteritis in the ascending arch or just below the coarctation, twelve per cent with cerebral lesions, thirty per cent with failing compensation and eight and one-half per cent with cardiac asystole. In all her cases of rupture of the aorta only one occurred below the coarctation. Benkwitz and Warren[18] studied seventy-five cases reported by different authors subsequent to Abbot's summary in 1928, none of which presented a rupture distal to the constriction. The author presents the second case of coarctation of the aorta with rupture distal to the constriction. In this case the patient had the symptoms and signs characteristic of a dissecting aneurysm;[19] namely, immediate onset of a maximal severe pain, radiation of this pain to the mid-lumbar region, maintenance of the blood pressure at a high level with a regular and scarcely elevated heart rate. The characteristic nausea and vomiting, however, were not present.

CASE REPORT

The patient, a male, sixty-two years of age, was seen March 19, 1938. He had been a pas-



Fig. 2. Shows the aortic arch with the constriction of the aorta.

senger engineer until 1928 at which time he was transferred to a switch engine because he was suffering from hypertension. On March 14, 1938, he started to operate one of the new diesel locomotives in which the operator's seat was without a back rest. Shortly before time to stop work on March 19 he leaned back in his seat. Realizing that there was no back rest he caught himself just in time to prevent a fall. Seven or eight minutes later he was seized with a severe lancinating pain in the back. He was apprehensive and called his wife to come for him. She realized that he was extremely ill and took him to the hospital where I saw him within thirty minutes after the onset of the attack of pain.

Past History: He had had most of the childhood diseases, typhoid fever in 1910, "flu" in 1917, malaria in 1928, and a compound fracture of the right tibia in 1901. He had been edentulous since 1926. He believed that he had had hypertension since 1917, although it was not certain that he had it until 1926 at which time he had an associated albuminuria. During the last two or three months he had experienced a dull aching around his heart that was not associated with activity, was localized, intermittent, lasting as long as half a day, but never severe enough to slow him up. There had been no epistaxis or headache. Palpitation, lasting several minutes, had occurred infrequently and had never been severe. He slept well until two in the morning and fitfully thereafter, occasionally wakening with a cold sweat. The rest of the history is of negative value.

Examination: The patient, an adult white male of about sixty years of age, was tossing about in bed in considerable pain. He had a tendency to keep his legs and thighs flexed. His pain was cyclic, exacerbations lasting about thirty seconds, recurring every thirty to sixty seconds, but never subsiding completely. It extended from the third dorsal vertebra to the second lumbar vertebra and lay deep. His face was pinched and drawn and he became cyanotic during these exacerbations of pain. The vessels over his temples were enlarged and tortuous.

There were no abnormal pulsations or swellings in the neck and no tracheal tug. The chest was symmetrical in appearance; the expansion equal on the two sides. There were numerous pulsations visible and palpable. On the right side over the ninth and tenth ribs in the posterior axillary line there were three pulsating tumors one-half by one and one-half centimeters; and over the seventh and tenth ribs in the mid-axillary line there was one thirteen by five centimeters. On the left side over the lower portion of the scapula there was a very tortuous pulsating vessel twelve inches long, although its ends were only four inches apart. It was visible and palpable throughout its entire length. Over the seventh and eighth ribs in the mid-scapular line were two small pulsating areas; in the mid-axillary line at the level of the seventh and tenth ribs there was a bifurcated pulsating vessel about four centimeters in length. There was a similar pulsating tumor in the left buttock about three centimeters in diameter. The chest was resonant throughout. The breath sounds were clear. Râles were not heard. The heart was only slightly enlarged, the left border being nine centimeters to the left and the right border 2.2 centimeters to the right of the mid-sternal line. There was a low blowing systolic murmur with a sharp second sound at the apex. In the tricuspid area the first sound was obliterated by a high pitched systolic murmur. In the aortic area there was a low pitched loud systolic rumbling that obliterated the first sound; the second sound was sharp. In the pulmonic area the second sound was sharp while the first sound was obliterated by a high pitched blowing systolic murmur. There were no significant findings in the abdomen. The dorsalis pedis artery was faintly palpable. On admission the blood pressure was 230/94. Thirty minutes later the systolic pressure was 208 milligrams of mercury and equal in both arms. The pressure in the lower extremity was not taken. The temperature was 96.8 degrees, the pulse 52, and the respirations 20.

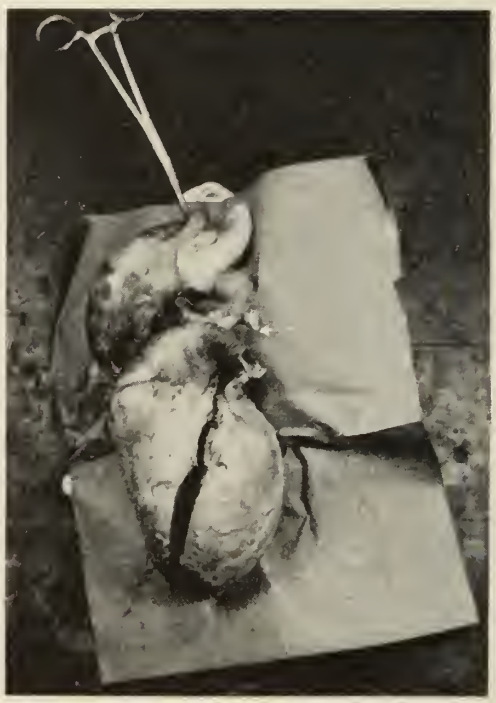


Fig. 3. Shows the size of the lumen at the point of stenosis. Note that the wooden applicator in the lumen fits snugly.

Laboratory Findings: The white blood count was 11,400; the red blood count, 4,670,000; hemoglobin, 80 per cent; the urine was negative and the Wassermann test was negative. A chest roentgenogram showed the aorta to be tortuous and showed numerous crescentic erosions along the inferior margins of the fourth to the ninth ribs.

The patient was placed on sedatives, sodium nitrite, and restricted fluids. His blood pressure

came down slowly and his pain gradually subsided so that on March 25, 1938, he was sent home to convalesce. The diagnosis at this time was dissecting aneurysm of the aorta; and the prognosis was unfavorable, although it was felt that he might live for some time. At home he continued to have some pain and was more active than advisable, getting out of bed several times and on one occasion going out of doors. At times he seemed moody and pensive. On March 31, 1938, he died of self-inflicted gunshot wounds.

At autopsy the deep epigastric arteries were about the size of a lead pencil and very tortuous



Fig. 4. Shows the tear in the opened thoracic aorta and the intima loosened by the dissecting aneurysm.

(Fig. 1) curling about, even in loops, so that they were about twice their normal length. They passed upward beneath the sternum to join the internal mammary artery which was likewise enlarged and tortuous. The enlarged intercostal arteries wound along the inferior margin of the ribs. About one and one-half inches beyond the origin of the left subclavian artery there was a marked constriction of the descending arch of the aorta. At this point a ligamentous attachment about one-fourth to one-half inch in width extended to the pulmonary artery (ligamentum arteriosus) (Figs. 2 and 3). The lumen of the aorta at the constriction was about two millimeters across and it was with slight difficulty that a wooden applicator could be passed into the lumen (Fig. 3). Immediately below the constriction the aorta became enlarged and bulbous. About six inches below the constriction there was a longitudinal slit through the posterior wall of the aorta (Fig. 4). There were no vegetations about this opening. Through it the blood had dissected between the walls of the aorta extending upward to the constriction and downward to within about one and one-half inches of the bifurcation of the abdominal aorta.

319 Higley Building.

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PROBLEMS OF DEAFNESS*

Gordon F. Harkness, M.D., F.A.C.S.,
Davenport

Our Creator in his infinite wisdom has endowed humans with special senses, and these special senses give us the joy of living. It may be that some are so self-satisfied, some so endowed with the genius of their minds that they not only successfully overcome the handicap of the loss of the

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special sense of hearing, but even glory in it, if we are to believe the story that Edison reveled in the loss of his hearing, claiming that thereby he suffered less distractions which were so inconsequential. However, we cannot apply this reasoning to you and me, representatives of people as they work and live together. To some, of course, there is a greater loss in being deprived of this acoustic sense. To the musician, to those who have an appreciation of diction as expressed by the spoken voice, and to those who really like their fellowmen and desire to mingle with one another, who enjoy the art of conversation, even though limited to the inconsequentials of their daily lives, who enjoy the thoughtful discussion of political and economic problems; to all of these the auditory function is a very essential part of the joy of living. In order to discuss this problem one must catalogue some of the fundamental subdivisions.

I. The incidence of deafness.
II. What is deafness? Types of deafness.
III. Remedial measures.
    A. To prevent deafness.
    B. To improve or cure deafness.
IV. Permanent deafness.
    A. The partially deaf.
    B. The totally deaf.
    C. The deaf child.
    D. The deaf adult.
    E. The psychology of the deaf child.
    F. The psychology of the deaf adult.
    G. Hearing aids.
    H. Lip reading.
    I. Educational and social problems of the deaf.
        1. Audiometric surveys.
        2. Schools for the deaf.

Deafness is so prevalent one marvels that those interested in educating the public to the needs of this handicapped group have had such an uphill battle. It is not to the credit of otologists that as a group they have been woefully lacking in the educational program. Dickie in 1932* stated there were 3,000,000 deafened school children in the United States. In the Davenport schools at the present time we have in the School for the Deaf, eleven totally deaf, and seven very hard of hearing children. An audiometric survey showed 250 with deficient hearing, and 75 having more than a 20 per cent loss, all of whom had been given medical attention directed to relieving their deafness.

We divide deafness into conductive and nerve deafness. Each may appear singly and in combination, and it is not always easy to establish how much one preponderates over the other. In addition we have the condition known as otosclerosis, generally appearing in young adult life, often with a family history, which in the beginning partakes more of a conductive type of deafness, but as time goes on, the pathology of the disease gives clinical evidence of nerve involvement, and there is not much to do about it.

When we speak of hearing as interpreting sound, we must remember that sound constitutes vibrations or waves of varying intensity and frequency set up in air, liquid or solid substances. The intensity is responsible for the loudness of sound and the frequency of vibration determines the pitch. Vibrations are spoken of as double vibrations or cycles. The audible pitch range varies from 16 to 16,000 cycles, although in some young individuals with very acute hearing the range is from 8 to 25,000 cycles. The fundamental tones of the speech range are from about 256 to 2,000 cycles. There is little above 8,000 cycles of any importance. There is also a normal decline with increasing age, affecting particularly the higher tones, so what may be pathologic in the young may not be so considered in older patients. While the unit of sound is the mille watt, measured in dynes per square centimeter, we measure hearing losses by what is known as the decibel. The decibel represents the smallest change in sound the human ear can detect, called the sensation unit. The decibel range is represented by 130 decibels. However, decibel appreciation varies in the pitch range, being the most acute through the voice range.

There is much we do not know about the sense of hearing. We speak of conductive deafness as some change which interferes with those structures that transmit sound waves to the end organ of the nerve, changing sound waves into mechanical vibrations in solids, then fluid vibrations before affecting sensitive nerve end organs. There must be something other than our ordinary conception of sound waves, by air and mechanical vibrations through denser media, more than just an accentuation of mechanical vibrations through the ossicles; it takes us into the field of electro-dynamics of which we know little when it comes to living tissues. A pin is dropped on a hard surface; can you conceive that when you hear that pin drop it is due to the vibrations set in motion in air, that these vibrations are of sufficient strength when they strike the surface of the tympanic membrane, that they can induce actual mechanical vibrations through the ossicular chain or in turn transmit to the oval window enough force to set up vibrations in the fluid of the internal ear with sufficient

*Dickie, J. K. M.: Chronic progressive deafness, including otosclerosis and diseases of the inner ear; summary of bibliographic material available in the field of otolaryngology. Arch. Otolaryng., xv:913-928 (June) 1932.

intensity to affect nerve endings which in turn weed out vibrations of different cycles? Living tissues have capabilities far beyond our ordinary conception of sound waves. This does not mean that we are to discard entirely the old theory of conductive deafness. We have clinical evidence of the need for the conductive apparatus to be in a condition of normal health. Improper areation of the upper respiratory tract is the greatest cause of an abnormal condition of the conductive apparatus in the middle ear. Congenital deafness has as important factors, heredity and consanguinity. The majority of patients with acquired deafness manifest the same before the age of five years, which is a most important reason for concentrating on the pre-school age in an educational program. In order of importance as causing acquired deafness are meningitis, measles, scarlet fever and influenza. Syphilis is not an important factor. Severe deafness following measles and scarlet fever is generally a nerve deafness. Quinine therapy to the individual and to the pregnant woman as influencing her offspring is a factor, particularly in the South.

In the child frequent colds and recurrent sore throats interfere with proper areation of the middle ear through the eustachian tube. The attentions paid to conditions of the nose and throat in childhood, particularly adenoids, secondly tonsils, then sinus disease and obstructive septums, have been the greatest factors in assuring the child of better hearing. This is not confined to permitting the eustachian tube to function more normally, but reduces the incidence of middle ear infections, with their sequelae of impaired hearing and chronic suppurative infections. The sequelae of the diseases of childhood, particularly measles and scarlet fever and the incidence of these diseases have a direct bearing on the number of deafened children in our schools. There were some, years ago, who accepted the incidence of these diseases as inevitable, but we know the dread anticipation of their occurrence should really be the motivating force to make us fight for their prevention. The science of medicine if applied is doing much for us in the prevention of disease which is far better than any successful remedy. We think of the sequelae of the diseases of childhood and the ear complications as leading to types of conductive deafness, but we must not forget the vulnerability of the eighth nerve, and that of all nerves it is particularly susceptible to body toxins. Faulty diets and improper elimination are factors to be remembered. Mumps takes its toll in permanently affecting the eighth nerve; meningitis likewise has permitted many youngsters to recover, but left them totally and permanently deaf. The treatment of deafness is, I believe, the most unsatisfactory of all our therapeutic measures. This does not include the work done for children in their upper respiratory tract, but a well-established deafness of the conductive type in the adult, without markedly upper respiratory abnormalities, or definite obstruction of the eustachian tubes, generally speaking resists any remedial measures. The treatment of deafness due to impairment of the auditory nerve has nothing to offer those so afflicted.

There is, however, much that the otologist can do relative to the psychology of the deaf, and not to their credit, otologists have not given this phase of the disease the attention that it deserves. In the educational field there have been a few who have freely given of their time and effort, in advocating surveys in our schools. These surveys have revealed astounding data as to the number of children with impaired hearing. The practical results are not confined to the hearing function in the individual child. Behavior problems in children may have as their cause, impaired hearing. Teachers aware of the child's handicap can so arrange the child's seating in the class that he is able to hear. I have had as a patient for years a boy, now thirteen years of age, a fine lad who is handicapped in his hearing. A classmate, a girl who has grown up with this boy, has learned to know from his facial expression whether he has failed to hear what has been said. His teacher has this girl seated by this boy. If he fails to get the spoken words she has permission to speak to him. This is applying practical psychology and this lad gets along very nicely. I have another boy who was a behavior problem in his school. Hearing surveys had not been made. His parents took him to a psychiatric hospital, where two days were devoted to various tests. Somewhere someone slipped; someone did not see the trees because of the leaves; no one had examined his ears or hearing. In this case the real cause was so apparent and the remedy so simple. His ear canals were packed with the hardest and most inspissated cerumen I have even seen in a child. Its removal restored his hearing and solved his behavior problems. Child psychology with impaired hearing is a real problem. Behavior problems under such conditions, if solved, permit a boy or girl to develop into a useful citizen leading a normal life; otherwise their handicaps may make of them not only aural but mentally warped individuals who will not fulfill their proper places in society.

The psychology of the adult deaf is another problem. It is strange but true; deafness often warps the disposition. Deafness seems to develop suspiciousness of one's neighbors. To be unable

to hear all of a conversation, to see one's friends conversing and laughing together, to be unable to enter the circle, and the fear that if one does, one may, through error be exposed to ridicule, seems to warp one's disposition. With it the deafened individual more often than not will attempt to hide his handicap. Those afflicted with refractive and ocular handicaps have no hesitancy in seeking aid and wearing the badge of their handicap, but the deafened individual seems to want to keep his handicap from the knowledge of those about him. If someone could only make it fashionable for every deafened individual to wear a sign "I am deaf and don't care who knows it", he would be giving a great boon to those so afflicted.

I am sure any otologist will tell you that time and again he has treated a deafened individual who reports that his hearing is much better, yet technical tests do not verify the improvements. The treatments have made a lazy listener into an eager listener. He had received a psychologic stimulant. The physician has delivered this perhaps unconsciously, and if he is aware of his opportunities, and a real physician should always be ready to take advantage of his psychologic opportunities, he will follow this up by sitting down and discussing the problems of his patient from a psychologic standpoint. The patient may not understand the significance of the fact that the intensity of the sound reaching the ear varies inversely as the square of the distance between the ear and the source of the sound, but he can understand that if you decrease the distance one half, the individual can hear four times as well. If the distance is decreased to one-fourth the original distance, the individual's hearing power is increased sixteen times. After this explanation the patient may then concentrate on getting nearer to the source of the sounds to be interpreted.

Another factor is stimulating the desire to hear, which in turn will stimulate the brain better to interpret the sound. There is the visual interpretation of speech, commonly called lip reading. Some one has called it visible hearing. I like to call it facial reading because it is more than just lip reading. Once the line of thought is comprehended by the deafened individual, there is so much in the facial expression of the speaker that aids the deafened listener. With some hearing remaining, the impressions to the brain are received coincidentally from the ear and the eye, and there takes place a coordination of these impressions, one helping the other. Those of you who have never seen will marvel, and those of you who have seen, I am sure have marveled, at the accomplishments of one totally deaf yet an accomplished lip reader. A number of years ago a young lady entered my office, asked for me, conversed with my secretary, came in and we talked for some time. On leaving she again stopped and talked with the young lady in the office. After she left I asked my secretary if she noticed anything unusual about the visitor. She said "No". Then I told her she was totally deaf, and a teacher of the deaf. To see these totally deaf people taking their places in society, carrying on with others in regular university classes, to see them dance with grace (getting the rhythm of the music through the floor vibrations) is truly marvelous. It can and is being accomplished.

However, there is an even wider field to facial reading; it is in that larger class, the hard of hearing, many of whom are isolated almost as much as the totally deaf. This is where greater educational effort is needed. This is where much can be done to overcome the psychoses of the deafened child. This is where the deafened adult must be impressed that there is a roadway back to human companionship and fellowship. To accomplish this concentration, high mental development is not necessarily required. It means the development of new brain pathways and centers, or if not that, the development of existing pathways and centers to new uses. Teachers tell me that the so-called society woman is usually a poor scholar. She is more often a "flitter" not a "concentrator", even if she perhaps is of high mentality. I recall one patient, a woman of wealth, who had a very capable instructor installed in her home on my advice, yet the results were practically nil because the patient in this case did not seem to have the capabilities of concentration and interpretation, and I can also recall a woman who was the best facial reader I have known and she was entirely self-trained. It is a part of the otologist's duty to spend some time explaining to his deafened patient the possibilities of facial interpretation.

The otologist should attempt to break down on the part of the deafened individual, the reticence that so many possess in letting the world know they are deaf. Once this has been conquered and a willingness to use a hearing aid is accomplished, one should explain that we with normal hearing learn to submerge the extraneous noises about us; our brains pick out, as it were, the sound waves we want to hear. The hearing aid in amplifying sound waves naturally amplifies all sound, and the one who uses a hearing aid must put his brain through an educational course, before he can obtain the maximum aid from his hearing device. The city dweller, even if his working hours are spent near an elevated railroad, learns to disregard such noises; if he is transported to the country he may even have difficulty in sleeping because

of the absence of his accustomed noisy environment. The explanation of these conditions are of immense psychologic benefit to the patient and are a real part of the job of an otologist who has a proper conception of his duties.

Hearing aids have made great advances in the last few years. Just as the ear is peaked in certain ranges to detect smaller changes, so hearing aids can be peaked for certain ranges; not, however, as successfully as the normal human ear or to as great a degree as some salesmen would have you believe. Radio amplification has been developed to where small radio tubes, battery operated, are now available in portable sets. Crystal pickups have been developed which are far more sensitive than the carbon type of receivers. These advances have come through acoustic engineers, not through the medical profession. Commercial companies realize that the field is large. There are companies who have spent large sums in research, their selling expense is extremely high, and as a consequence, the cost to the individual is more than it should be, based on actual manufacturing costs. There are companies who have done all this and are legitimately trying to sell only to the individuals they can help. Such a field naturally invites commercial competition from the unscrupulous dealer. It is the duty of the otologist to warn his patient against the unscrupulous salesmen. Within the profession there is much discussion to the effect that the otologist should first examine and advise regarding the hearing aid to be purchased. Certainly he should advise in a broad way, but when it comes to specific advice I cannot agree with the general tone of medical literature, and for the following reasons.

A careful diagnosis of the type of the deafness may help; an audiogram may be of assistance, yet the selection of an instrument is still largely one of trial and error. It remains essentially empiric. There are unmeasurable factors; the resonance response of the outer ear; the adjustability of the ear to sudden changes in pitch and intensity, and the reaction of the ear to continual stimulation by artificial means. The deafened patient often has a distorted idea of speech, and in giving his answers he is governed by this false premise, rather than an interpretation of normal speech; thus his testimony is not always reliable. Hearing aids should be tested by sounds which come to the microphone through the air as in normal hearing. Robert West, professor of speech pathology at the University of Wisconsin, has devised a method of testing hearing aids, in which an audiometer is assembled with an amplifier and a loud speaker, and with the transmission of the sound through the air. It is rather complicated and I doubt if it can successfully be adopted by otologists who only occasionally would be called upon to use it. It must also be remembered that the hearing aid is really a product of acoustic engineering. It is not considered ethical for an otologist to become a paid agent for any one brand of hearing aid. The otologist is not an acoustic engineer, and certainly there is no incentive for him to become one, if there is to be no compensation for time and effort spent along such lines. Unless he does so qualify himself, his advice cannot go beyond a diagnosis of the type of deafness, and the probable type of hearing aid which will give the best results.

The wearing of a hearing aid requires re-education on the part of the individual. So many dissatisfied purchasers have discarded their aids because they would not go through this period of education. This has led ethical manufacturers to insist on the full purchase of an instrument at the time the instrument is acquired. I can sympathize with the manufacturer, but I believe a more equitable selling arrangement might be devised. It seems fairer to the deafened customer to increase the charges for the trial period, rather than to demand the complete purchase in the beginning.

With the popularizing of hearing aids and the educational campaigns promulgated, the audiometer has come into prominence. Certainly the audiometers as devised for group testing in schools and other institutions fill a great need. There is no other method of making surveys with equal efficiency and saving of time. Not until the last year or so did the otologist know just what part an audiometer was to have in his armamentarium. Through the Bureau of Standards and the Committee of the American Medical Association we now have standards by which to evaluate these machines. Time does not permit a discussion of the types of audiometers. We should remember that the whispered and spoken voice in the patient's natural environment still remains the most practical test of his deafness. In diagnosing the type of deafness the audiometer is not essential. Commercial audiometers now on the market are reliable, but they are not research instruments; they alone show graphically relative losses for different tones; they offer better opportunities for comparison with later examinations and with other examiners' records, they offer the best in malingering tests, and they offer better opportunities to discover diplacusis. It may be that so-called loudness balance lines will give us a better means of deciding the predominance of conductive over nerve deafness and vice versa. They may help us in diagnosing otosclerosis, although this has not been established. The audiometer is a most excel-

lent aid, but not a necessity in the practice of otology.

I have referred to the incidence of deafness, the isolation of the deaf, and to the fact that it is not only the totally deaf but that larger group, the hard of hearing, who needs to be educated to these opportunities. How is this to be done? We must first organize the deafened people. They can be instructed in a group as to what they can do for themselves, and what can be achieved through hearing aids and lip reading. Assembling them will help each of them in getting rid of that desire to hide their affliction. Once started on the road they become an active unit in educating the public to the needs and rights of the deafened citizen. The National League for the Hard of Hearing is the goal, but there are two dollar dues. We have organized, locally, the Tri-City Society for the Hard of Hearing. The Volta Bureau, 1537 Thirty-fifth Street, N. W., Washington, D. C., will supply full information as to organizations, their purposes and accomplishments.

The great need is in the schools. We acknowledge the right of every child to an education. Some communities seem to forget that the handicapped child has that same right of education. He is entitled to an education, even if the individual cost is more, to just the same degree as is the normal child. His education will also pay future dividends. One of the first steps in this direction is an audiometric survey of the school population in each community. As stated before, in the Davenport School for the Deaf, there are eleven totally deaf, and seven very hard of hearing children. A survey showed 250 with deficient hearing, 75 of which showed more than a twenty per cent loss. Muscatine has recently organized a School for the Deaf, with two totally deaf and forty hard of hearing individuals. I am not, of course, a teacher of the deaf, but I have for years cooperated with the head of our School for the Deaf, Miss Wills. From her I gained the following information which may be of interest to you.

The totally deaf are of course known, but the audiometric survey brings to light many unknown hard of hearing. A twenty per cent loss of hearing generally makes one eligible for lip reading, although this varies in individual cases. Lip reading is better taught for a short period every day, but three times a week will bring practical results. The ratio of one teacher to eight totally deaf children is needed. The totally deaf and the hard of hearing are two different groups and should not be together. One teacher can instruct 45 or 50 hard of hearing children, but individual classes should not exceed fifteen, groupings being made according to grades. One so-called itinerant teacher for lip reading, going from school to school, teaching for short periods, can take care of 75 pupils.

We have not been able to obtain the itinerant teacher, except in one small group, and their scholastic record in regular classes has shown a definite improvement over the record of those who formerly had lip reading instruction but have not had the advantage of continued instruction. The deafened child should be kept with other children wherever possible; he should be allowed to grow up in a normal home and school environment. If he is given his rights he will become a better citizen. Finally the medical profession, in general, and the otologists in particular should so identify themselves with this program, that none can say our profession has failed to meet its obligations to society.

FIFTEEN YEARS' OBSTETRIC PRACTICE

F. R. RICHMOND, M.D., Fort Madison

This paper is a statistical study of fifteen years of obstetric practice, including all full term deliveries from October 1, 1923, to November 1, 1938. It comprises 1,470 cases, an approximate average of one hundred cases a year.

The average length of labor for the primiparas was fourteen and one-half hours, and that of the multiparas, six hours. There were 925 babies born in the home, approximately 63 per cent; and 545 in the hospital, approximately 37 per cent. The large variation of positions is shown in the accompanying table.

VARIATIONS OF POSITIONS

Position	Cases	Per Cent
Right Occipito-anterior	686	46.7
Left Occipito-anterior	615	41.9
Right Occipitoposterior	47	3.2
Right Occipitotransverse	6	.4
Left Occipitotransverse	6	.4
Right Mentoposterior	2	.15
Left Mentoposterior	2	.15
Right Mento-anterior	1	.07
Left Mento-anterior	1	.07
Undetermined (Mostly precipitate labors)	51	3.5

Thirty-eight per cent of all cases were delivered between midnight and 6:00 a. m.; 21 per cent between 6:00 a. m. and noon; 25 per cent between noon and 6:00 p. m.; and 16 per cent between 6:00 p. m. and midnight. In this connection it might be of interest to note that the amount of sleep lost on the 544 babies born between midnight and morning was 1,632 hours. Figured on a basis

of eight hours of sleep a night, this amounts to 204 days or six months and twenty-four days.

The sex of the babies was about even; 52 per cent were boys and 48 per cent girls. The average weight of the girls was seven pounds and nine ounces, that of the boys, eight pounds and one ounce. Twelve pairs of twins were included in the series.

There were no maternal deaths in the series, but several mothers had narrow escapes. On one occasion a generalized staphylococcic septicemia followed a long hard labor, low forceps and a deep laceration because it was impossible to rotate the head, either manually or with forceps, from a posterior position. Five nearly died in convulsions from so-called toxemias of pregnancy. There were forty-three cases of toxemia, but only the five patients mentioned were dangerously ill.

There were nineteen fetal deaths, including the still births and those infants who died shortly after birth. Ten of these were still births, but five of the ten were alive and normal shortly before birth. Two died following breech extraction, five following version and extraction, five from prolapsed cord, two from placenta previa, and five were macerated fetuses.

The time of delivery of 1,250 cases was carefully estimated by two methods; first, the ordinary method which is to count back three months from the first day of the last period and add seven days (except when February is included, and then only five days are added); and second, the latter method which is to count back three months from the last day of the last period. Seventy-eight per cent of the cases delivered nearer to the date estimated from the last day of the last period, and twenty-two per cent nearer to the date estimated from the first day of the last period. This percentage is explained, no doubt, by the so-called silent period after each menstruation when pregnancy does not take place because of the absence of ovulation.

There were fifteen cesarean sections in this series, an average of one in each one hundred cases, with no maternal or fetal deaths. One patient, a primipara with a contracted pelvis, had been in labor for about twenty hours. She had a temperature of 101 degrees and a leukocyte count of 14,200, but her bladder was ruptured and she had an enormous amount of extravasated urine. A low cervical cesarean section was performed, and her recovery was uneventful. The other cases were all classical cesarean sections without complications. The indications were: contracted pelvis, twelve; eclampsia, two; and multiple myofibroma of the uterus, one. In no instance was a cesarean section performed before the mother had been given the test of labor.

There were eighteen versions and extractions. Eleven of these were right occipitoposterior cases, too high for forceps, or cases in which the fetus could not be rotated manually or with forceps. One was a central placenta previa, and the rest were face cases. There were five fetal deaths in this group, four from cerebral hemorrhage, one from prolapsed cord. There were forty-seven breech extractions with two fetal deaths; ninety-eight low forceps deliveries; fifty mid-plane forceps; eight high forceps, making a total of 156 forceps deliveries. This figure does not include ten cases of forceps on the aftercoming head.

Eighty episiotomies were done, all on primiparas or on those who had had previous episiotomies. We are very much in favor of this procedure when it is indicated, but on succeeding deliveries it is often necessary to repeat it to prevent lacerations. Two third degree lacerations occurred; one on a right posterior case in which the fetus could not be rotated manually or with forceps; the other, during a breech extraction. They were repaired immediately after delivery without complications. Many of these patients have been examined carefully for trauma other than visible lacerations, and we have always been able to demonstrate some trauma, although in many cases it may be slight. There is always a certain amount of trauma present in every childbirth.

The prenatal management of the cases was similar to that followed by all obstetricians. Each patient was advised to report once each month for urine analysis, blood pressure and physical examination for the first seven months, and twice monthly during the last two months. The pelvic measurements were taken on the first visit, unless there was a previous record of these measurements. A book of instructions was given to each patient. During the last four years, calcium, iron and other minerals have been prescribed routinely and the patient's dental bills have been reduced considerably because of the absence of dental caries during pregnancy. This treatment has also caused a noticeable increase in the size of the babies, which in turn results in somewhat harder labors.

Various drugs have been used to make the labors less painful, and these included scopolamine and morphine; ether and quinine in oil with magnesium sulphate; sodium amytal; luminal; and nembutal. Each of these has its merits, but in a home where there is no nurse or experienced attendant the patient is hard to control. We prefer morphine and scopolamine. For the eclamptic

convulsions, morphine has been used extensively, but the best results have been obtained by giving ten to fifteen grains of sodium amytal intravenously, according to the size of the patient.

In summing up this brief paper a few conclusions have been drawn.

1. There is no such thing as a normal labor of a full term baby, even if it is called normal, because there is always some trauma to the mother.

2. The estimation of the time of delivery is more nearly correct if counted from the last day of the last period instead of the first day.

3. The babies average larger in the smaller towns and country, probably because the statistics of large clinics in cities are taken from the poorer classes of patients who are undernourished or do not get the right variety of food.

4. There were only fifteen cesarean sections in this series, although there should have been three more. Comparing this to other statistics, I believe too many cesarean sections are being done.

5. Analgesics of various kinds are to be limited to hospital cases or those in homes where there is a trained nurse or experienced attendant to watch the patient.

CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

Hospital Staff Meeting of April 18, 1939

CYSTOGRAPHIC DIAGNOSIS OF PLACENTA PREVIA

ROBERT J. PRENTISS, M.D., and
WARREN W. TUCKER, M.D., Iowa City

From the Departments of Urology and of Obstetrics and Gynecology

The question may well be asked why an extragenital method of diagnosing placenta previa is desirable. If placenta previa is present, contamination of the genitalia increases the risk of subsequent cesarean section. For those who routinely treat placenta previa by means of section, a method is provided to corroborate or disprove a diagnosis made on symptoms alone. Cystography is an office procedure without risk or discomfort to the patient. On the other hand, vaginal examination requires hospitalization and adequate preparation to control severe uterine hemorrhage if it should result from the examination. Thus, risk, pain and expense accrue to the patient subjected to the vaginal method of diagnosis.

In the past many have attempted to devise roentgenologic methods for the diagnosis of placenta previa. The first satisfactory method, by means of cystograms, was introduced by Ude, Weum and Urner in 1934. These authors introduced 40 cubic centimeters of 12.5 per cent sodium iodide into the empty bladder and made one anteroposterior film with the tube focused on the bladder. Since then there have been conflicting reports on the method.

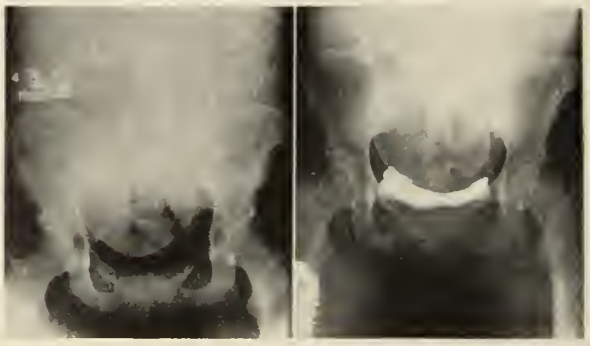


Figure 1. Normal anteroposterior cystograms of the same patient illustrating the sharp delineation of the vesicocranial space obtained with air as compared with sodium iodide.

The fundamental principle of the cystographic method is very simple. In the vertex presentation, the fetal skull is separated from the interior of the urinary bladder by the fetal scalp, fetal membranes, uterine wall, peritoneal fold, and bladder wall. The space occupied by these structures has been designated as the "craniovesical space." When the interior of the bladder is outlined with some medium, the craniovesical space is clearly defined on the x-ray film. If some new tissue, such as the placenta, is interposed between the presenting fetal part and the visualized bladder, the craniovesical space will be distorted and widened. It is on the presence or absence of this distortion or widening that the diagnosis of placenta

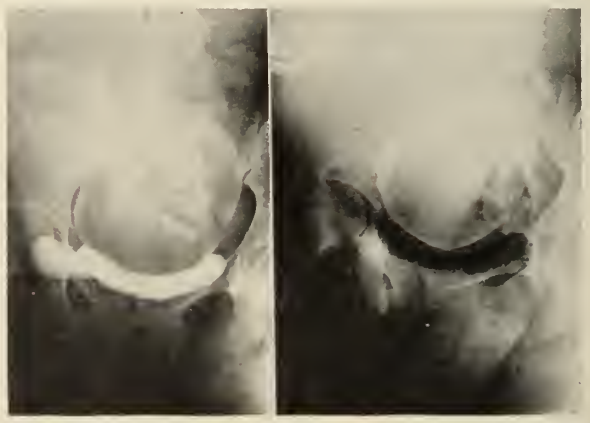


Figure 2. Normal semilateral cystogram in the same patient, comparing air and sodium iodide as media. Note the clear visualization of the vesicocranial space in the air cystogram.

previa is made or excluded. In the breech presentation, although the term is not specifically applicable, similar relationships occur. After some preliminary study, it was believed that the cystographic method could be improved in three ways: first, by the introduction of a better contrast medium to delineate the bladder; second, by the use of more than one plane to view the craniovesical space; and third, by the introduction of a system of comparative measurements.

Air proved to be the best contrast medium because it was readily at hand, non-irritating, and because it brought out in sharp relief the silhouette of the craniovesical space. (Figures 1 and 2.) This



Figure 3. Position assumed by the patient for the right semilateral film.
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facilitated measurement of the space. The anteroposterior view of the craniovesical space did not give any information concerning the width of its posterior portion. Direct lateral views were unsatisfactory because of bony obstruction. By turning the patient 35 degrees on the right and left sides (Figure 3), excellent views of the posterior portions of the craniovesical space were obtained without bony obstruction, since the rays passed through the greater and lesser sciatic notches. To obviate possible errors due to a floating head, the table was tilted, feet down ten and 40 degrees in the anteroposterior views, and ten degrees in the semilateral views. A system of relative measurements was established by measuring the perpendicular distances between the arcs of the fetal head and of the bladder at fixed points; namely, at the mid-symphyseal point and bilaterally at a distance

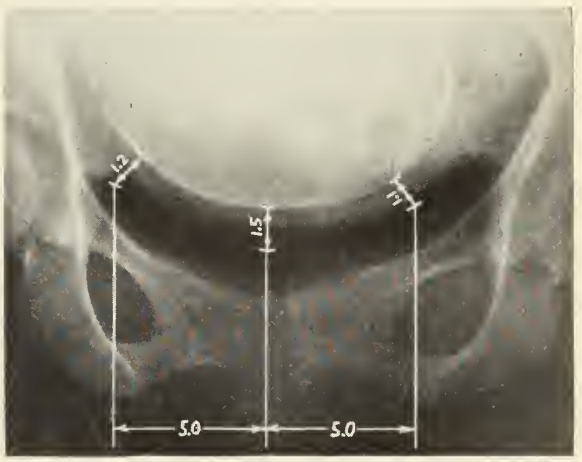


Figure 4. Anteroposterior cystogram illustrating the method of obtaining measurements of the vesicocranial space.
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of five centimeters from this point on the anteroposterior cystogram (Figure 4), and on the semilaterals at the mid-symphyseal point and five centimeters posterior to this point. (Figure 5.) The technic adopted finally was:

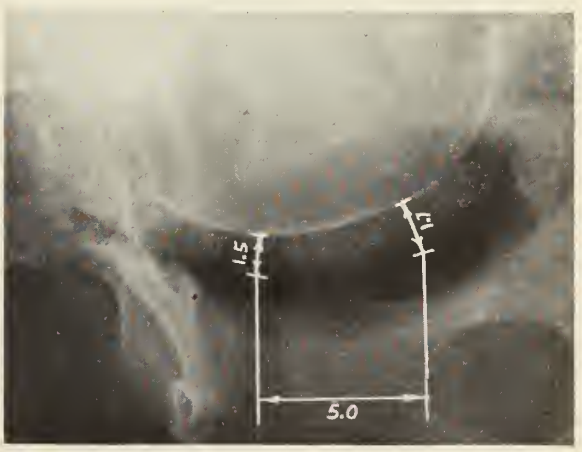


Figure 5. Method of measuring the vesicocranial space in the semilateral position.
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1. Give a low cleansing rectal enema. (This procedure is not absolutely necessary.)
2. Empty the bladder with a catheter.
3. Introduce 100 to 120 cubic centimeters of air.

4. Remove catheter, instructing patient to retain the air.

5. Tilt table ten degrees feet down and take an anteroposterior film centering on the bladder.

6. With table in same position take right and



Figure 6. Anteroposterior air cystogram of a patient who had a placenta previa implanted on the left side posteriorly. This film shows nothing conclusive of the diagnosis which was made only on examination of the semilateral films.

left semilateral views centering on the bladder with the patient's pelvis tilted 35 degrees first to the right, and then to the left.

7. Make a fourth exposure with table tilted at an angle of 40 degrees with the horizontal and

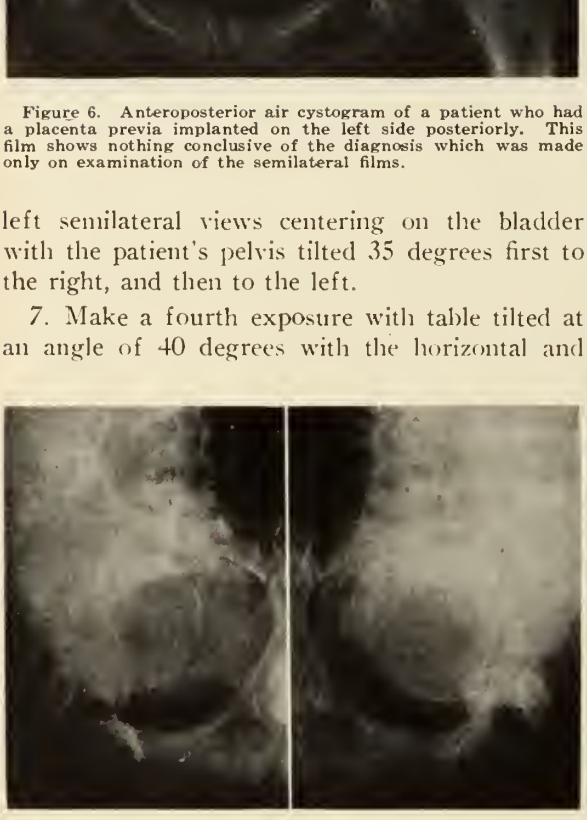


Figure 7. Semilateral cystograms of the patient mentioned in Figure 6. The right semilateral film (the left one above) shows deflection of the posterior horn of the bladder, indicating the posterior marginal placenta previa on the left side.

the feet down, with the patient again in the supine position. (This film is not absolutely necessary, but is useful for comparison.)

The roentgenograms were taken on Dupont film, using a Snook machine fitted with a Potter-Bucky diaphragm with intensifying screens and operating at 50 milliamperes and 74 to 78 kilovolts. The distance from film to tube was 33 inches, and the time of exposure was three seconds.

The relative constancy of the craniovesical space from patient to patient in width and symmetry is well established in the normal. It is remarkable



Figure 8. Right semilateral sodium iodide cystogram of another patient whose anteroposterior cystogram was inconclusive of placenta previa, but who was found, on pelvic examination, to have a posterior marginal type.

how the arc of the bladder parallels the arc of the head in patients without placenta previa. (Figures 4 and 5.) However, when a placenta is interposed between the head and bladder the craniovesical space is distorted both in width and sym-

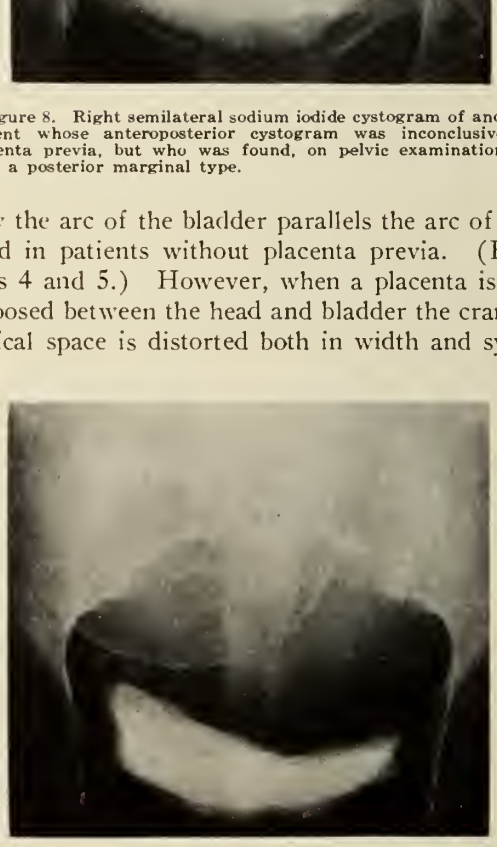


Figure 9. Anteroposterior sodium iodide cystogram showing definite evidence of placenta previa.
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metry. This distortion varies from slight to marked as the position of the placenta varies from marginal to central. Posterior partial placenta previa produces little or no distortion in the anteroposterior view of the craniovesical space. (Figure 6.) Therefore, many diagnoses will be missed if

one does not view the space in each semilateral position. (Figures 7 and 8.) It is chiefly on this gross distortion of width and symmetry that the diagnosis of placenta previa is made. However, measurements help to confirm the diagnosis. Table I gives the range and average of the normal measurements on the x-ray films. Generally speaking, measurements above the upper limits of normal should suggest placenta previa. Blood clots within the uterus, fetal anomalies, tumors of the mother, and bony dystocia may produce falsely positive cystograms. Normal contours of the vesicocranial space may be erroneously produced in two ways; first, by a pendulous abdomen which may allow the head to override the symphysis; and second, by attempts at forceful introduction of the head into the pelvis. (Figures 9 and 10.)



Figure 10. Cystogram of patient mentioned in Figure 9. Manual pressure, however, has been applied to the fundus thus obliterating all diagnostic evidence of placenta previa. This patient had a nearly central insertion of the placenta as proved by cesarean section.

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One hundred and forty patients were studied in this series. Ninety-seven per cent of all films obtained on vertex presentations and 95 per cent of all presentations were readily interpretable. Cystograms of 60 per cent of breech presentations were amenable to interpretation. It is to be noted that in this condition it is more difficult to make a positive diagnosis than it is to eliminate the possibility of placenta previa. None of the cystograms of patients with transverse presentations was interpretable. Only forty-three of the one hundred forty patients presented last trimester bleeding, the remaining ninety-seven being used as controls. Fourteen of the forty-three actually had placenta previa, subsequently proved by clinical examination. Eleven of the fourteen (78 per cent) were diagnosed by cystograms. The three failures were attributed to the presence of a breech presentation, a transverse presentation, and a marked fetal anomaly (tumor). Of the twenty-nine patients who did not have placenta previa, its absence was accurately established by cystograms in twenty-six (90 per cent). The films of the other three were not interpreted conclusively because of the presence of a twin pregnancy, a pregnancy of five months in breech presentation, and technically poor films. It was concluded from the study that:

1. Air was the most satisfactory contrast medium used to outline the bladder.
2. Consistency of accurate diagnosis was improved by use of cystograms made with the patient in each semilateral position.
3. Measurements of the craniovesical space were a distinct aid to diagnosis.
4. The method is technically easy, and without danger or discomfort to the patient.
5. The percentage of accurate positive diagnoses was 78, and of negative 90.

TABLE I*

Measurements (centimeters) of the space between bladder and fetal skull of patients without placenta previa.

Anteroposterior

Position	Medium	Number of Patients	Right Aver.	Right Range	Mid Aver.	Mid Range	Left Aver.	Left Range
Supine	Air	61	1.3	0.7-2.2	1.3	0.8-2.1	1.4	0.7-2.3
Semi-erect	Air	32	1.0	0.7-2.1	1.1	0.7-1.8	1.1	0.7-1.9

Semilateral

Position	Medium	Number of Patients	Anterior Aver.	Anterior Range	Posterior Aver.	Posterior Range
Right	Air	74	1.2	0.7-2.2	1.7	0.8-2.8
Left	Air	16	1.1	0.8-1.7	1.4	0.7-2.3

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Discussion

Dr. Gillies: The authors have covered the subject so thoroughly there is little left to discuss. I think the contribution to the study of placenta previa, the substitution of air cystograms for the opaque, and the introduction of the semilateral position represent a definite improvement over the old method. However, I like to do the easy things first, and I think it is important to remember that the normal placenta can be seen on a great many patients. It is easy to locate the placenta in the fundus of the uterus and very frequently it can be seen easily. The ventral part of the fetus is usually turned toward the placenta and gives the clue. It might be advisable to take the flat film first to see if the placenta can be definitely located in the fundus. One point Dr. Prentiss did not mention is that some patients with a deformed pelvis will have a false reading.

Dr. Randall: The diagnosis of placenta previa by

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means of the cystogram is accurate and reliable. However, this method is not to be used entirely to the exclusion of vaginal examination. On the other hand, those who routinely treat vaginal bleeding in the last trimester of pregnancy by cesarean section should take time to do a cystogram. Many cases of bleeding will be found by these means to be due to a separation of the normally implanted placenta, and the patient should be allowed to go to term and be delivered from below. The cystogram is also of considerable value in those patients who have had slight bleeding and who do not present a typical history or abdominal findings of placenta previa. This type of patient could have a cystogram in the office and if negative for placenta previa, one would be justified in allowing the patient's pregnancy to continue. However, the patient who has had considerable bleeding and who has signs and symptoms suggestive of placenta previa should be admitted to the hospital for treatment. A vaginal examination can be done to make a definite diagnosis, but one should be prepared to treat the condition at once in case it proves to be placenta previa.

THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

DIABETES COMPLICATED BY ACUTE APPENDICITIS

F. P. McNAMARA, M.D., Dubuque

The medical profession generally recognizes that acute infections increase the severity of diabetes. Stated in another manner, acute infections are more severe in diabetes. In spite of this recognition foci of infection are occasionally overlooked, especially in the emergency of caring for threatened coma. The following case re-emphasizes the need for a diligent search for sites of infection in diabetic patients who do not respond in the usual manner to insulin therapy.

CASE REPORT

The patient, a white boy eleven years of age, was admitted to The Finley Hospital, September 24, 1926, because of a "headache and pain in the abdomen."

Family History: His father, mother, four sisters and a brother were well. There was no family history of diabetes.

Past History: The patient was well until two years before admission when a diagnosis of diabetic coma was made in this hospital. After insulin therapy and a regulation of the diet he was dismissed from the hospital in good condition. Subsequently he followed dietary instructions and was making good progress until about two months before the present illness. At that time a relative suggested "spinal adjustments" and these were given by a chiropractor who also liberalized the diet. As a result he had been eating almost all forms of food.

Present Illness: He was first seen by his doctor on the afternoon of admission and then had air hunger; was restless, weak and tired and complained of headache and pain in the abdomen. As the symptoms suggested the onset of coma he was sent to the hospital.

Physical Examination: The patient was semicomatose, poorly nourished and had a dry skin which appeared icteroid. His face was flushed and slightly cyanotic, and he was suffering from air hunger. The eyes were glassy. The tongue was dry and heavily coated. The eyes, nose and ears were normal. The lungs and heart were also negative. There was marked distention of the abdomen and on pressure there was generalized pain which seemed most marked in the right lower quadrant. The extremities and nervous system were negative aside from the coma. The temperature was 101 degrees, the pulse 130 and the respirations 30 per minute.

Course in Hospital: The admission blood sugar level was 190 milligrams per 100 cubic centimeters. Blood CO_2 combining power was 22. The patient was given a diet of 386 calories and ten units of insulin every six hours, and the coma cleared up after twenty-four hours. However, the patient's urine continued to show sugar and the CO_2 combining power averaged 40. On the second day he developed a moderately severe, watery diarrhea. The next day he complained of nausea and began to vomit. The blood sugar level fell to sixty milligrams per 100 cubic centimeters. He had an insulin shock which was relieved by ten cubic centimeters of fifty per cent glucose given intravenously. The temperature rose to 104 degrees the night of admission, fell to normal the next morning, and then fluctuated between normal and 102.4 degrees. The pulse paralleled the temperature curve, varying between 120 and 150 per minute. The respirations fluctuated between 25 and 35. A white blood count on the second day showed 12,800 cells per cubic millimeter. The patient died in coma seventy-two hours after admission.

Clinical Diagnosis: Diabetic coma.

Necropsy Abstract: On opening the peritoneum the distended small intestines extruded through the incision. They contained a considerable amount of foul fluid, fecal material and gas. The large intestine was collapsed. Most of the peri-

toneum was simply congested, but in the region of the cecum there were flecks of fibrin over the intestines. This area contained 250 cubic centimeters of cloudy, serous fluid with coarse flakes of fibrin. The appendix was covered by a fibrinous exudate. The wall was edematous and the mucosa necrotic. Grossly the pancreas seemed normal, but microscopically some of the insular tissue was hyalinized and a few of the islands seemed hyperplastic. The other organs showed only acute congestion.

Anatomic Diagnosis: Primary: 1. Acute suppurative appendicitis; localized peritonitis; adynamic ileus. 2. Diabetes mellitus (coma).

Comment: In retrospect it is difficult to understand why appendicitis was not suspected in this case. The patient had fever, rapid pulse, leukocytosis, abdominal pain and distention, nausea, vomiting and diarrhea. These are the signs indicative of appendicitis. Probably the explanation for the failure to make a diagnosis rests upon the fact that the clinicians were primarily concerned with overcoming the coma and overlooked the need for the detection of an acute infection in a young diabetic patient who was doing poorly.

DISCUSSION

In an analysis of the causes of death in 3,575 diabetic individuals in different eras Joslin[1] found that acute infections accounted for between 7.4 and 16.6 per cent. The latter figure was reached early in the Banting Era (1922-1925). Since then, and probably due to our improved knowledge of the use of insulin, there has been a gradual decline but, between 1930 and 1935 acute infections were still the cause of death in 12.4 per cent of these diabetic patients. The incidence of the various infections in Joslin's series since 1926 is shown in the accompanying table. It is evident that pneumonia and the pyogenic infections are the most frequent causes of disaster in diabetic patients. Appendicitis accounted for thirteen of the 264 (five per cent) deaths due to the acute infections in the period.

Warren[2] states that "the nature of the susceptibility of the diabetic to infection is as yet unknown, although many hypotheses have been tested." He described toxic injury to the islands of Langerhans in both diabetic and non-diabetic individuals and pointed out that in the former the injury may result in overthrowing the delicate balance between the insulin produced and the carbohydrate utilized. In our short series of diabetic patients with acute infections (tonsillitis, septic infarcts of the lung, moist gangrene of the foot, etc.), we have noted acute hyalinization of some of the insular tissue. In one instance there was a definite focal necrosis with a zone of round cells and polymorphonuclear leukocytes about the islands.

It would seem most likely that the injury to the islands decreases the amount of available insulin and that this results in a lessening of carbohydrate metabolism. This in turn tends to produce acidosis. However, as Warren pointed out, it is possible that the effects of toxin may be upon the insulin in the blood stream or may result in interference with the carbohydrate metabolism in the tissue cells. He cited Rosenthal and Behrendt as having found that pus mixed with insulin abolished the insulin effect when injected into rabbits. Regardless of the solution of this fundamental question at present one must constantly remember that acute infections, when they occur in diabetic patients, interfere with carbohydrate metabolism. Practically this means as Joslin[3] has stated "Insulin will not maintain a sugar free urine during active infection unless given in very large doses." Because of these large doses of insulin there is, of course, a constant danger of an insulin reaction. Therefore, the important thing is to diagnose the infection and to eliminate it as soon as possible, and before the systemic effects become pronounced.

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	Middle Banting Era Jan. 1, 1926—Dec. 31, 1929		Later Banting Era Jan. 1, 1930 to date	
	Deaths	Per cent of all cases	Deaths	Per cent of all cases
Infections, total	142	15.8	122	12.4
Pneumonia and respiratory	74	8.3	56	5.7
Throat and ear	7	0.7	7	0.7
Gallbladder disease	5	0.6	4	0.4
Appendicitis	8	0.9	5	0.5
Carbuncle	11	1.2	7	0.7
Frysipelas	7	0.8	1	0.1
Abscesses	22	2.4	21	2.1
Other infections	8	0.9	21	2.1

STATE DEPARTMENT OF HEALTH

Nate L. Bierring

Industrial Hygiene

Excerpts from a paper by
ROY R. JONES, M.D., Washington, D. C.
Surgeon, Division of Industrial Hygiene
National Institute of Health

Industrial hygiene is the science of health preservation of the worker, including not only the prevention of disease but the improvement of health already existing. Such health preservation can only be accomplished by the cooperation of the physician in private practice, the physician in industry, and the physician in public health.

Scope of Industrial Hygiene.

A program for the prevention of disease and improvement of health can be successfully carried out when we know what diseases are occurring in a particular group, where they are occurring, when they are occurring, and why they are occurring. Of the disabilities recognized as directly resulting from occupation, or working environment, specific occupational diseases contribute but a small portion, estimated to be less than ten per cent of the total for industrial accidents and occupational diseases. We have, however, no satisfactory method of measuring the part played by ill health in the production of accidents. It is commonly accepted that illness causes from six to eight times more lost time from work than do accidents.. Two per cent of the workers are off duty due the illness at all times, and it is believed that for every person so incapacitated there are at least two others physically impaired to the extent of ten to fifty per cent of their efficiency because of chronic illness. Although the cost of maintaining adequate health supervision to lessen the time lost due to illness may seem excessive, it is but a small percentage of the savings in human life and dollars to industry, the individual, and the community. One estimate places the cost of lost time due to illness at eight to ten billion dollars annually. The types of illnesses of primary importance in the field of industrial health have been clearly shown by data collected from representative industrial organizations. Chief among these are influenza, the common cold, pneumonia, tuberculosis, and other respiratory diseases.

Death Rates Among Unskilled and Other Workers.

As the socio-economic level decreases, there is a considerable increase in the death rate. Thus unskilled workers have a mortality rate almost twice that of professional and clerical workers. When the causes of death are carefully analyzed, it will be seen that the incidence of pneumonia, tuberculosis, and practically all the so-called degenerative diseases is greater among the semi-skilled groups than in all the others. Factors such as economic status, diet, contact with individuals suffering from infectious diseases, or lack of medical care, are of importance.

Tuberculosis and Pneumonia Rate High in Certain Industries.

Numerous investigations may be cited to show the excessive rates of tuberculosis and pneumonia in certain occupational groups, and the effects of such rates upon the mortality rates for the community or state are clearly evident. In a study on the incidence of tuberculosis among polishers and grinders in an ax factory, it was found that the death rate from pulmonary tuberculosis was more than ten times that for the general population of the state. In the report by the Public Health Service upon the health of workers in the granite industry it was found that the annual rate per 1,000 for tuberculosis among pneumatic-tool cutters for ages twenty and over, was 19.58, while for rural Vermont the rate for a similar age group was but 1.42. It has been estimated that in the United States there are more than 500,000 workers employed under conditions affording a harmful exposure to silica dust. It is apparent that efforts

to reduce tuberculosis among this group through control of the silica hazard and through a well-planned educational program as to how tuberculosis may be prevented, will materially benefit the general population. Among iron and steel workers, the pneumonia rate is approximately twice that for employees in public utilities and other industries as a group.

Chronic Diseases Incapacitate Employees.

A survey of persons of all ages has shown that chronic diseases, including permanent impairments, account for six of the ten days of incapacity from illness and accidents experienced by the average person per year. With respect to sickness and accidents, data to be published by the Division of Industrial Hygiene show in the instance of a public utility that on the average, 7.5 days were lost annually by males and 10.9 by females.

Industrial Hygiene Division Organized in States.

During the past two years, the United States Public Health Service, has, upon request, through the Division of Industrial Hygiene, assisted in the development of this field in state and local health departments. Today twenty-three states and four municipal departments of health have taken steps to provide industrial health services. It must be remembered, however, that these units have been recently established, and only a few are in a position to render complete or adequate service to industry and labor, other interested state health departments, and the medical profession. At present the industrial hygiene divisions in our states and cities are confining their work chiefly to the evaluation and control of occupational diseases in industry. Since information regarding potential health hazards is a prerequisite to satisfactory control, the State Divisions of Industrial Hygiene are taking steps to secure such data by means of statewide surveys of representative industrial establishments. In addition to providing data relative to potential health hazards these surveys serve also to show the health supervision available to workers generally, and afford an opportunity to establish for the future more complete reporting of illnesses causing lost time from work. When this information is available, established public health methods may be applied.

Rôle of the Industrial Physician

Formerly, the activities of the industrial physician were limited chiefly to the treatment of traumatic injuries and the examination of applicants for employment. Present day trends show that industrial physicians are more and more stressing the aspects of prevention. The program includes first, careful preëmployment examination and the placement of applicants at work in positions they are physically fit to fill with safety to themselves and fellow-workers; second, periodic examination to detect physical changes at a time when they and the conditions causing them may be corrected and serious disability prevented; and third, advice as to need for giving prompt treatment of respiratory and other acute illnesses, and early diagnosis of tuberculosis, cancer, syphilis, and like conditions.

We must remember, however, that a large portion of those gainfully employed are at work in smaller establishments where the management has no practical means of providing this service. Of a total of more than 8,000,000 persons employed in manufacturing plants, about one-half are found working in establishments with less than 250 workers. The obstacles associated with the development of a complete health service for employees in these small units are not unsurmountable, if the problem is approached in a cooperative spirit. While public health officials may assist in the administrative fact-finding and educational phases of the work, the success of their efforts, as in the case of other fields of public health, is dependent upon the close cooperation and aid of the group served and physicians in the community.

SIX SPOTTED FEVER CASES REPORTED IN MAY

From May 20 to 27, six cases of Rocky Mountain spotted fever were reported by attending physicians to the Iowa State Department of Health. Table I contains initials, age, sex and occupation of these patients and the names of the reporting physicians:

TABLE I

Name	Age	Sex	Occupation	Reporting Physician
1. G. J.	12	F	Farm girl	H. E. Stroy, M.D., Osceola
2. R. N.	5	M	Farm boy	G. W. Gilfillan, M.D., Bloomfield
3. F. B.	52	M	Carpenter	J. G. Stolley, M.D., Moville
4. A. A.	49	M	Carpenter	C. B. Luginbuhl, M.D., Des Moines C. H. Carryer, M.D., Des Moines
5. B. E.	25	F	Housewife	Ira D. Nelson, M.D., Toledo
6. R. R.	57	M	Farmer and trucker	C. C. Rambo, M.D., Creston

Table II gives the county of residence of the six cases with the date of onset of illness and the date of report:

TABLE II

County	Date of Onset	Date of Report
1. Clarke	May 10	May 20
2. Davis	May 7	May 21
3. Woodbury	May 5	May 22
4. Boone	April 29	May 22
5. Tama	May 23	May 26
6. Van Buren	May 25	May 27

The first case to be reported in 1939 was notified to the department by Dr. Stroy in Clarke County. The patient was a member of the same farm household in which three children (one of whom died) suffered an attack of spotted fever two years ago. The case reports show acute onset of illness characterized by severe headache, fever, chill or chilliness, abdominal discomfort, usually with vomiting, muscle soreness (pain in legs) and marked weakness or prostration.

In most instances a macular rash appeared on the third day beginning on wrists and ankles, later becoming generalized to include body and face as well as extremities. Two fatalities resulted among the six reported cases. One of the deaths occurred in an Indian woman at the Sac and Fox Reservation in Tama County, from which locality six cases (two deaths) were reported in the summer of 1937. It is as yet uncertain as to whether the second fatality, Case No. 6, was caused by Rocky Mountain spotted fever or by overwhelming infection associated with a fulminating type of purpura.



Fig. 1. Showing characteristic rash of Rocky Mountain spotted fever.

The accompanying photograph was forwarded to the State Department of Health through the courtesy of Dr. Stroy, and shows the distribution of the macular and petechial lesions which characterize the rash seen in a typical case of Rocky Mountain spotted fever.

PREVALENCE OF DISEASE

	April '39	March '39	April '38	Most Cases Reported From
Diphtheria	37	34	8	Black Hawk, Woodbury, Kossuth
Scarlet Fever	545	650	880	Polk, Black Hawk, Cherokee
Typhoid Fever	2	2	5	Cerro Gordo, Lee
Smallpox	200	125	195	Scott, Decatur, Polk
Measles	900	815	925	Cass, Mitchell, Montgomery
Whooping Cough	52	52	100	Woodbury, Linn
Cerebrospinal Meningitis	1	1	4	Van Buren
Chickenpox	242	375	337	(For State)
Mumps	182	223	107	(For State)
Influenza	262	2664	11	Tama, Cedar
Poliomyelitis	1	0	1	Jasper
Tuberculosis (Pulmonary)	84	85	84	(For State)
Undulant Fever	2	4	5	(For State)
Gonorrhea	92	121	175	(For State)
Syphilis	238	256	365	(For State)

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HOUSE OF DELEGATES ACTION ON WAGNER NATIONAL HEALTH BILL

Of the many events which marked the recently concluded Ninetieth Annual Session of the American Medical Association at St. Louis, none surpasses in interest or significance for the physicians of America the action taken by the House of Delegates on the Wagner Health Bill, otherwise known as Senate File No. 1620.

Dr. Irvin Abell in his presidential address reviewed the stand taken by the American Medical Association at the special meeting of the House of Delegates last September, toward the recommendation of the Technical Committee on Medical Care for the participation of the federal government in health activities. This attitude is summarized in the following quotation from Dr. Abell's address. "Expansion of public health, maternal and child welfare services with limitation of curative measures to private practice where available; utilization of vacant beds in present hospitals on a per diem basis; the construction of new beds and diagnostic health centers on a basis of economic, geographic and health needs with standards for hospital administration and for professional personnel; perpetuation of hospitals and health centers; the formulation of plans for the care of the medically needy, determined by local and financial needs under medical and local state supervision; the approval of sickness compensation and of voluntary insurance for hospital and medical service, and unqualified opposition to the suggestion in Recommendation IV that the individual states initiate studies and plans for the care of all their people on a tax paid basis * * *."

Because of its importance, and in order that the readers of the Journal may be fully informed, your editor deems it advisable to include in these columns the complete text of the report of the Reference Committee to the House of Delegates which was adopted on May 17, 1939, without dissenting vote.

Your Reference Committee has carefully considered the bill designated as Senate File No. 1620, "A bill to provide for the general welfare by enabling the several states to make more adequate provision for public health, prevention and control of disease, maternal and child health services, construction and maintenance of needed hospitals and health centers, care of the sick, disability insurance, and training of personnel; to amend the Social Security Act; and for other purposes."

History of Wagner Health Bill

This bill was introduced by Senator Robert F. Wagner of New York, February 28, 1939, and is commonly referred to as the Wagner Health Bill. The bill itself provides that, if it be enacted, it may be cited as the "National Health Act of 1939." The purposes of the bill are sufficiently stated in the title, but the bill itself must be recognized as a proposed amendment to the Social Security Act of 1935. The bill is intended to make effective a national health program recommended by the Interdepartmental Committee to coordinate health and welfare activities. The House of Delegates of the American Medical Association, at its special session in Chicago, September 16 and 17, 1938, adopted five recommendations made by a special committee that had been appointed to consider and report on the National Health Program. It is important that this fact be borne in mind, for the bill now under consideration, which was drafted long after those recommendations were adopted and at a time when they were presumably known to the proponents of this bill, does not recognize either the spirit or the text of those recommendations. Any criticism of this bill by the Association is not to be construed, therefore, as a repudiation of any of the principles adopted by the 1938 Special Session of the House of Delegates.

Analysis of the Bill

Senate File No. 1620 proposes to amend Title V of the Social Security Act, Grants to States for Maternal and Child Welfare, and Title VI, Public Health Work and Investigations, and proposes to add to the Social Security Act certain new titles; namely, Title XII, Grants to States for Hospital and Health Centers; Title XIII, Grants to States for Medical Care; and Title XIV, Grants to States for Temporary Disability Compensation. Already some individuals and organized groups in the United States have appeared before the Senate Subcommittee which has this bill under consideration and have urged its immediate enactment. Although the stated objectives of the Wagner Health Bill are generally recognized as desirable, your committee cannot approve the methods by which these objectives are to be attained. Repeatedly, physicians and all other qualified professional groups have recommended the coordination and consolidation of the health activities of the fed-

eral government. The Wagner Health Bill leaves existing and proposed preventive and curative medical services widely scattered through several federal agencies.

This bill does not in any way safeguard the continued existence of the private practitioners who have always brought to the people the benefits of scientific research and treatment. It does not provide for the use of the thousands of vacant beds now available in hundreds of church and community general hospitals. The Wagner Health Bill proposes an extensive program in the field of "health, diagnostic, and treatment centers, institutions and related facilities," without defining their functions. This bill proposes to make federal aid for medical care the rule rather than the exception, since it does not specifically limit its benefits to persons unable to pay for adequate medical care. The Wagner Health Bill does not recognize the need for suitable food, sanitary housing and the improvement of other environmental conditions necessary to the continuous prevention of disease and promotion of health. This bill insidiously promotes the development of a complete system of tax supported governmental medical care, thus undermining and debasing present standards of medical services.

The House of Delegates in September, 1938, urged compensation for the loss of wages during sickness. The Wagner Health Bill deviates from this suggestion by proposing to provide medical services in addition to compensation. The Wagner Health Bill would authorize an enormous expansion of governmental medical services and therewith ultimately unlimited appropriations for its health program. The funds necessary would be so great as to increase still further the present burdensome general taxation. The Wagner Health Bill provides for supreme federal control. Rules and regulations must be promulgated by the Chief of the Children's Bureau in the Department of Labor, the Surgeon General of the Public Health Service, the Federal Emergency Administrator of Public Works, and the Social Security Board. These federal agents are given authority to disapprove plans proposed by the individual states.

The House of Delegates at its September, 1938, session approved the expansion of preventive and other medical services when the need could be shown. The Wagner Health Bill prescribes no method for determining the nature and extent of the needs for which it proposes allotments of funds. The provisions in the Wagner Health Bill that have never been considered by the House of Delegates are: the authorization of appropriations for studies, investigations and demonstrations; and the creation of federal and state advisory councils.

Conclusions

The Wagner Health Bill, as judged by the considerations that have been here presented, is inconsistent with the fundamental principles of medical care established by years of scientific professional medical experience, and in the opinion of your committee it is, therefore, contrary to the best interests of the American people. For years the health of the people of the United States, as measured by sickness and death rates, has been better than that of most foreign countries, and this improvement has been continuous. The fortunate health conditions in the United States cannot be dissociated from the standards and methods of medical practice that have prevailed under the present system of medical practice. No other profession and no other organization has done more for the prevention of disease, the promotion of health and the care of the sick than have the medical profession and the American Medical Association. No other groups have shown more genuine sympathetic interest in human welfare.

The contribution of the individual members of the American Medical Association to medical care is universally regarded as monumental in total volume. The contribution of the American Medical Association, through a program of medical education and the activities of its numerous councils which safeguard medical service, gives abundant proof of interest in the problems of the national health. It has given continued consideration to these problems, whereas others show concern with these proposals because of a present but, it is to be hoped, temporary need for relief. These are the groups which request revolutionary legislative action as indispensable for the extension and further diffusion of health facilities. In view of its record and in consideration of the responsibility which American social history and the nature of medical care have imposed on the medical profession, the American Medical Association would fail in its public trust if it neglected to express itself unmistakably and emphatically regarding any threat to the nation's health and well-being. The American Medical Association must, therefore, speaking with professional competence, oppose the Wagner Health Bill.

Recommendations

Nevertheless, recognizing the soundness of the principles stated in the recommendations adopted by the House of Delegates at its special session in 1938; namely, the expansion of preventive medicine and public health where need can be shown, the extension of medical care for the indigent and the medically indigent where the need can be demonstrated, with local determination of needs and local control of measures to supply these needs, your committee would urge the development of a mechanism for meeting these needs within the philosophy of the American form of government and without damage to the quality of medical services. This question, as it relates to the aid to be given by an individual state to its own counties, municipalities or other local political units, is not immediately before this Association. The answer is to be found in the individual state constitutions and state statutes. Counties, townships and municipalities are creatures of the individual states and can be molded and guided by the state for its own purposes. The individual state, itself, is not a creature of the federal government. The fed-

eral government is, as a matter of fact, a creature of the individual states.

The fundamental question is how and when a state should be given financial aid by the federal government out of the resources of the states as a whole, pooled in the federal treasury. Disasters, such as floods, dust storms, fire and epidemics have long been recognized as justifying such federal aid. No state or person has ever been heard to object to the use of funds out of the federal treasury for such purposes. No one has ever proposed, however, that because federal aid is extended under such conditions to a state in distress, a corresponding aid must be extended to every other state, regardless of its need. Nor has anyone ever been heard to say that federal aid to a state in distress, because of flood, dust storm, fire or epidemic, shall not be extended, unless and until the suffering state has produced from its own treasury a stated amount of money to aid in affording the relief. The development of such bizarre thinking may be traced to those who have originated within comparatively recent years the granting of federal subsidies, sometimes referred to as "grants in aid," to induce states to carry on intrastate activities suggested frequently in the first instance by officers and employees of the federal government. The use of federal subsidies to accomplish such federally determined activities has invariably involved federal control. Any state in actual need of financial aid from the federal government for the prevention of disease, the promotion of health and the care of the sick should be able to obtain aid in a medical emergency without stimulating every other state to seek and to accept similar aid and thus to have imposed on it the burden of federal control.

The mechanism by which this end is to be accomplished, whether through a federal agency to which any state in need of federal financial assistance can apply, or through a new agency created for this purpose, or through responsible officers of existing federal agencies, must be developed by the Executive and the Congress who are charged with these duties. Such method would afford to every state an agency to which it might apply for federal assistance to enable it to care for its own people without involving every other state in the Union or the entire government in the transaction, and without disturbing permanently the American concept of democratic government.

Summary

1. The Wagner Health Bill does not recognize either the spirit or the text of the resolutions adopted by the House of Delegates of the American Medical Association in September, 1938.

2. The House of Delegates cannot approve the methods by which the objectives of the National Health Program are to be obtained.

3. The Wagner Health Bill does not safeguard in any way the continued existence of the private practitioners who have always brought to the people the benefits of scientific research and treatment.

4. The Wagner Health Bill does not provide for the use of the thousands of vacant beds now available in hundreds of church and community general hospitals.

5. This bill proposes to make federal aid for medical care the rule rather than the exception.

6. The Wagner Health Bill does not recognize the need for suitable food, sanitary housing and the improvement of other environmental conditions necessary to the continuous prevention of disease.

7. The Wagner Health Bill insidiously promotes the development of a complete system of tax supported governmental medical care.

8. While the Wagner Health Bill provides compensation for loss of wages during illness, it also proposes to provide complete medical service in addition to such compensation.

9. The Wagner Health Bill provides for supreme federal control; federal agents are given authority to disapprove plans proposed by the individual states.

10. The Wagner Health Bill prescribes no method for determining the nature and extent of the needs for preventive and other medical services for which it proposes allotments of funds.

11. The Wagner Health Bill is inconsistent with the fundamental principles of medical care established by scientific medical experience and is therefore contrary to the best interests of the American people.

12. The fortunate health conditions which prevail in the United States cannot be dissociated from the prevailing standards and methods of medical practice.

13. No other profession and no other group have done more for the improvement of public health, the prevention of disease and the care of the sick than have the medical profession and the American Medical Association.

14. The American Medical Association would fail in its public trust if it neglected to express itself unmistakably and emphatically regarding any threat to the national health and well being. It must, therefore, speaking with professional competence, oppose the Wagner Health Bill.

15. The House of Delegates would urge the development of a mechanism for meeting the needs for expansion of preventive medical services, extension of medical care for the indigent and the medically indigent, with local determination of needs and local control of administration, within the philosophy of the American form of government and without damage to the quality of medical service.

16. The fundamental question is how and when a state should be given financial aid by the federal government out of the resources of the states as a whole, pooled in the federal treasury.

17. The bizarre thinking which evolved the system of federal subsidies, sometimes called "grants in aid," is used to induce states to carry on activities suggested frequently in the first instance by officers and employees of the federal government.

18. The use of federal subsidies to accomplish such federally determined activities has invariably involved federal control.

19. Any state in actual need for the prevention of

disease, the promotion of health and the care of the sick should be able to obtain such aid in a medical emergency without stimulating every other state to seek and to accept similar aid, and thus to have imposed on it the burden of federal control.

20. The mechanism by which this end is to be accomplished, whether through a federal agency to which any state in need of federal financial assistance can apply, or through a new agency created for this purpose, or through responsible officers of existing federal agencies, must be developed by the Executive and the Congress, who are charged with these duties.

21. Such a method would afford to every state an agency to which it might apply for federal assistance without involving every other state in the Union or the entire government in the transaction.

22. Such a method would not disturb permanently the American concept of democratic government.

Closely related to the present controversy over the extent of need for governmental participation in medical practice are the findings revealed by the survey being conducted by the American Medical Association into medical care in the United States. Dr. W. F. Braasch, chairman of the committee, reported to the House of Delegates that replies to questionnaires had been received from 20,199 physicians and dentists from 763 counties in 37 states, representing a population (according to the 1930 census) of 43,790,068 persons. Approximately 17,000 of the replies were from physicians who report giving medical service without charge to 2,611,451 persons. Only about one-fourth of the physicians in the area studied replied to the questionnaire, so that the number of persons receiving gratuitous services may be conservatively set at double this figure. From the replies received the committee estimates that the number of people in the United States who are denied needed medical services is 40,000 and not 40,000,000 as maintained in the Technical Committee report before the National Health Conference. The discrepancies so far brought out between this survey conducted by physicians who are in the field doing the actual work, and the previous governmental surveys, are enormous. In the meanwhile the Wagner Health Bill is before Congress in the stage of preliminary committee hearings. What can the individual doctor do?

In the first place he should read and ponder on the words of Dr. Nathan B. Van Etten of New York, president elect of the American Medical Association, who in his acceptance speech said to the House of Delegates, "Yesterday you adopted a report defining your position in relation to the proposed Wagner Health Bill. It will have small value, however, unless the whole medical profession of the United States is educated fully to understand it. Every delegate must realize his official obligations as never before and carry home to every single practitioner in his state a full consciousness of the importance of this declaration of principles. That practitioner is potentially one of the most powerful persons in the democracy. If he can be made to see his duty to his country and educate his patients to a realization of the dangers of centralized control of medical practice, your action of yesterday will be sustained. In the name of welfare, gentlemen of the House, the practice of medicine as you know it and as you hoped it would become is to be destroyed. The functions of the most highly educated group of professionals in the world are to be taken over by bureaus operated by adventurous amateurs. The time has come for the concerted action of every doctor in the United States."

Personal letters to individual senators and representatives in Washington carry a tremendous appeal. Furthermore, each practitioner should constitute himself a committee of one to see that a resolution is brought before his county society supporting this action of the House of Delegates. Copies of any adopted resolutions should be forwarded not only to the senators and representatives comprising the congressional delegation of the doctor's own state, but also to the chairman of the Senate Committee on Education and Labor, Senator Elbert D. Thomas of Utah. Copies should be sent also to the several members of the subcommittee having the bill immediately in charge; namely, James E. Murray of Montana; Vic Donahey of Ohio; Allen J. Ellender of Louisiana; Robert M. LaFollette, Jr., of Wisconsin; and Robert A. Taft of Ohio.

THE USE OF TETANUS TOXOID

The use of tetanus toxoid to induce active artificial immunity has proved to be a reliable and practical preventive measure. For soldiers, for individuals engaged in hazardous occupations, and particularly for allergic individuals who are sensitized to horse serum, it is especially indicated.

In this country alum precipitated tetanus toxoid has been employed in two doses at intervals of two months. This dosage results in a low titer of antitoxin, averaging about 0.06 units per cubic centimeter, one year later. However, if a secondary injection of toxoid is given at this time, or at the time of any injury, there is a rapid and astonishing increase in the antitoxin content of the blood. The content of antitoxin increases twenty to fifty times, and reaches a higher level and a more persistent concentration than that produced by the prophylactic injection of 1,500 units of antitoxin. The reactions to the use of alum precipitated tetanus toxoid are comparable to the reactions ob-

tained with alum precipitated diphtheria toxoid. Frequent local reactions result and brief febrile reactions occasionally occur. No test for immunity is comparable to the Schick test, but the annual administration of an additional injection of toxoid should maintain a reasonable titer of antitoxin.

Jones and Moss of the University of Indiana have administered a combined diphtheria and tetanus toxoid, alum precipitate, and potency tests have demonstrated that it is a feasible procedure. Ramon, after considerable laboratory and clinical investigation, has demonstrated that mixed vaccination with different antigens produces a synergistic effect, the various immunities mutually enhancing one another. As a result of the work of Ramon the soldiers of the French army have been given a triple mixed vaccination of tetanus and diphtheria toxoid and typhoid vaccination. According to this author "the method of mixed vaccination is being rapidly generalized in France, since its practical value has been amply confirmed by application in a variety of social groups of all ages."

From a public health point of view, mixed vaccination is unusually attractive. If the simultaneous administration of two or more antigens is proved to be a safe and effective prophylactic measure, it has a definite place in public health and in private practice. The use of tetanus toxoid alone or combined with other antigens is recommended in selected groups of individuals.

THE AMERICAN CONGRESS OF OBSTETRICS AND GYNECOLOGY*

In the past few years we have seen tremendous changes in our social, economic, and industrial life. Many of these reforms were inevitable if progress was to continue. All were seemingly made in the interests of human welfare. It is only proper that the medical profession consider its responsibility in this great task of human betterment. Although infant and maternal mortality rates have been greatly reduced in recent years there is still great opportunity for improvement. It has always been the desire of those interested in obstetrics to make childbirth as safe as possible for the mother, and to insure for the future the happiness and health of both mother and her baby.

With this objective in mind the American Congress of Obstetrics and Gynecology has recently been organized. This society, which is the first to be organized in America, will hold its first meeting in Cleveland, Ohio, September 11 to 15, 1939. It is officially sponsored by the American Committee on Maternal Welfare, which was founded in 1919 through a committee appointed by the American Gynecological Society and which now includes representatives from the most important obstetric organizations, nurses associations, and public health and hospital associations.

The Congress will bring together representatives of the medical and nursing professions with hospital administrators and educators. This meeting will give an opportunity for analysis and discussion of the scientific and technical problems involved in the care of maternity patients, through sectional meetings with each of the groups attending. It will also bring together the leading authorities of the various groups for discussion of problems requiring combined effort for solution, among which is that of educating the public as to where to seek and what to look for in evaluating the services needed by the expectant mother and her offspring.

The subject of maternity, before, during and after birth, will be covered from every angle, including legal, humanitarian, social and ethical, as well as technical, aspects. Here, in this meeting, will be crystallized from the many opinions of leading investigators and educators, the ideal care for the expectant mother. Through the efforts of this Congress it is fervently hoped that the dangers of childbirth for both mother and baby will be greatly minimized. No doctor or any individual concerned with the health of maternity patients and infants can afford not to attend this first American Congress of Obstetrics and Gynecology.

*This editorial has been prepared, by request, by Dr. John H. Randall of Iowa City, chairman of the Congress for the state of Iowa.

PNEUMOTHORAX DIRECTORY

We believe many members of the Iowa State Medical Society will be interested in the following letter recently received from Dr. John H. Peck, superintendent of the State Sanatorium at Oakdale. It would seem that a directory of this nature should prove very much worthwhile to physicians and patients throughout the state.

"There is an increasing number of patients discharged from the State Sanatorium to various parts of the state who require continuation of artificial pneumothorax treatment. If adequate pneumothorax service is obtainable from qualified physicians, patients could frequently be discharged much earlier, thereby shortening the waiting list and reducing the cost to the various counties.

"A pneumothorax directory is being prepared of Iowa physicians who have the apparatus to give pneumothorax refills. All such are requested to notify Superintendent John H. Peck, Oakdale, Iowa, and their names will be placed on the list."

The cooperation of all members of the society is solicited to the end that this directory may be complete and accurate.

SPEAKERS BUREAU ACTIVITIES

OUR EXHIBIT

During the week of May 15 through 19, the Speakers Bureau sponsored a postgraduate medical education exhibit at the American Medical Association meeting in St. Louis, in conjunction with similar displays from North Carolina, Oklahoma, Tennessee and Virginia. Many Iowa physicians, as well as numerous out-of-state men, visited the booth during the five day interval, and because of the interest shown in the material presented, and the complimentary reactions received to the manner in which it was set forth, the Speakers Bureau feels justified in printing the picture below for the benefit of those who were unable to review the display at that time.

The exhibit covered the postgraduate medical education which has been conducted in Iowa for the past ten years, and fifty-seven lighted centers on the large map successfully and artistically designated the points at which instruction has been presented in the past decade. The small maps on both side walls illustrated Iowa's postgraduate instruction progress by years. Centers in which the courses were held, programs, lecturers and enrollments were included on these graphs.

The Speakers Bureau was extremely gratified with the attendance at the booth and the comments which it evoked; through such participation it has gained not only successful recognition, but a more thorough knowledge and clearer understanding of the operation, progress and development of the same line of endeavor in associated states.

RADIO SCHEDULE

WSUI—Tuesdays at 3:00 p. m.

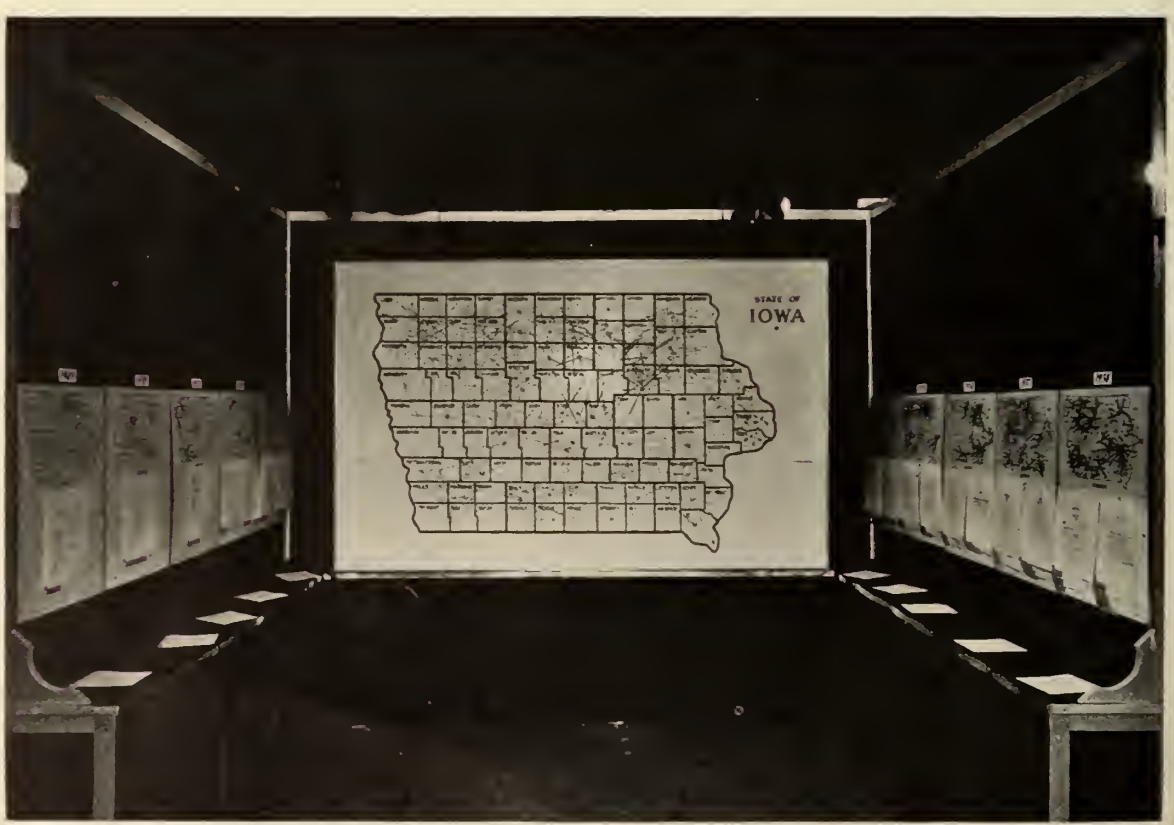
WOI—Wednesdays at 2:15 p. m.

June 6 Vacations, W. R. Brock, M.D.

June 13 The Parathyroid Glands, C. B. Luginbuhl, M.D.

June 20 Summer Skin Troubles, L. J. Frank, M.D.

June 27 Diabetes Mellitus and Its Management, W. D. Paul, M.D.



WOMAN'S AUXILIARY NEWS

Mrs. Fred Moore, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—Mrs. Edward A. Hanske, Bellevue
President Elect—Mrs. Elbert T. Warren, Stuart
Secretary—Mrs. Walter J. Connell, Dubuque
Treasurer—Mrs. Jay C. Decker, 722 Thirty-sixth Street, Sioux City

GREETINGS FROM YOUR PRESIDENT

In accepting the duties of this office, the presidency of the Woman's Auxiliary to the Iowa State Medical Society, I am not insensible to the obligations that go with it; not only the honor it confers, but the responsibilities it carries. I recognize the great work accomplished by my able predecessors, and it shall be my earnest endeavor to carry on to the best of my ability.

The foundation of a great institution has been erected, and with the enthusiasm and cooperation of the Medical Society, I feel that the Auxiliary will continue to expand and spread the spirit of good will and fellowship among its members. I heartily endorse all the work of an educational nature, and desire to promote a program on health education. It would be wise for each member to become conversant with the opportunities for service in the public relations work. I wish to emphasize the importance of the great good that can be accomplished in expanding the work being developed in mental hygiene, in a careful study of the problem of social security, and in closely cooperating with the medical profession in conducting a campaign of cancer control. Let us place *Hygeia* in every public library and school. This magazine is a medium between the doctor and the layman; it is the only publication of national circulation devoted entirely to health which acts as an interpreter of scientific medicine to the public.

As president elect during the past year it has been my privilege to view the close association of the Medical Society and our Auxiliary, and I feel that under the guidance of the Advisory Committee the medical profession has contributed both moral and material support in abundance. With this feeling of security I trust I can extend to all an inspiration of strength and fortitude to carry on this great work.

Mrs. E. A. Hanske, President

REPORT OF THE NATIONAL AUXILIARY CONVENTION

The Seventeenth Annual Convention of the Woman's Auxiliary to the American Medical Association was held in the Regency Room of the Hotel Chase in St. Louis, May 16 and 17, 1939. The Association was organized in St. Louis in 1922, and at this meeting we had the original general chairman of entertainment, Mrs. Willard Bartlett, Sr. The first president of the Association, Mrs. Samuel Clark Red of Houston, Texas, was also present.

Thirty-nine of the forty-eight states have organized auxiliaries, and a good share of them had delegates at the convention. State reports showed that the majority of the states have a definite project to work for along with their social activities. Some of their projects are: student loan fund for nurses; student loan fund for doctors; milk fund for underfed children; fund to help needy doctors' widows and children; immunization in districts where it is not available otherwise; rural library distribution; *Hygeia* placed in schools and public places; and making of layettes for needy mothers.

Many auxiliaries are scattered so far apart over a states' area that it is not possible for them to meet together often as a state unit, but they are doing a splendid piece of work in their own communities. Many reports stressed the idea that a doctor's wife should become a well informed person upon all subjects pertaining to the welfare of the medical profession, and then be active in the various organizations in her community. One state auxiliary has taken the following for its motto:

"It's a good thing to know and a
better thing to do,
To join the construction gang, and
not the wrecker's crew."

Mrs. W. R. Hornaday

The total registration at the annual session numbered 1,526. Iowa was credited with forty-seven, and it is interesting to note that there was one registration from each of the following countries: Alaska, Canada, Mexico, British Columbia and South Africa. The membership award cup was given to the state of New York for the addition of 448 new members, a gain of 63.3 per cent over their membership last year.

The beloved first president, Mrs. Red of Texas, was in attendance and responded with the following well chosen words: "We are most delighted to be back in St. Louis. We were brought into the world here just seventeen years ago, a mere infant in swaddling clothes. From that stage we have grown into young womanhood of seventeen. We are trembling on the brink of being a debutante, and as soon as we can snare a few states like Maryland, Connecticut and Ohio, we are going to be a full fledged mature woman, and will take our place in the nation as one of the greatest bodies of women in this whole United States. It is a great pleasure for me to be here today and to know that Mrs. Bartlett is again assuming her place as general chairman of entertainment. She appreciated it so when the organization was born here so many years ago and was so helpful to me in starting this organization. I hope we aren't going to have to wait seventeen years before coming back again. Please invite us before that."

On Tuesday the luncheon at the beautiful club house of the St. Louis Women's Club was to honor the seventeenth birthday of our organization. A birthday cake with seventeen candles was lighted and brought in, after which a very enjoyable and original program was presented. Following this all the members were taken in buses on a personally conducted tour over the most interesting parts of St. Louis. On the day before, we were also taken by bus to visit four of the loveliest private gardens for which St. Louis is so famous. At each of these gardens, tea and other refreshments were served. Fortunately for each of these trips the weather was glorious; no wind, not a cloud in the sky, and yet cool enough to be comfortable. The ladies had evidently ordered the weather in advance.

On Tuesday afternoon we were guests of the Women's Club, St. Louis University School of Medicine, at an exquisitely appointed tea. All visiting ladies were guests of the Woman's Auxiliary to the St. Louis Medical Society, Wednesday evening at a buffet supper served in the St. Louis Medical Society building. After the supper we enjoyed a motion picture, "The Quest of Alaska Seal Skin," and a fashion show. The final social events were a steamboat trip down the Mississippi River, and the annual "Bring Your Husband" dinner, and we were ready to fold up our tents and bid farewell to our charming hostesses.

The Woman's Auxiliary to the Nebraska State Medical Society presented Mrs. Tomlinson, national president, with a lovely silver bowl in appreciation of her work. Beautiful corsages and gorgeous floral bouquets were everywhere in abundance, and I was very happy and proud to wear one from the Iowa Auxiliary.

Officers elected for the coming year are as follows:

President—Mrs. Rollo K. Packard, Chicago, Illinois.

President Elect—Mrs. V. E. Holcombe, Charleston, West Virginia.

First Vice President—Mrs. David O. Thomas, New Kensington, Pennsylvania.

Second Vice President—Mrs. Otto C. Hagmeier, Seaside, Oregon.

Third Vice President—Mrs. M. B. Van Cleave, Terra Haute, Indiana.

Fourth Vice President—Mrs. W. K. West, Oklahoma City, Oklahoma.

Recording Secretary—Mrs. John Bauer, Long Island City, New York.

Treasurer—Mrs. E. E. Fisher, Portland, Oregon.

Mrs. Gertrude Downing

DALLAS-GUTHRIE AUXILIARY

At the invitation of the Dallas-Guthrie Medical Society, members of the Auxiliary were privileged to hear Dr. Frank A. Ely of Des Moines discuss the problem of juvenile delinquency at the meeting of the Medical Society in Panora, April 20. Following this the Auxiliary met in regular session with the president, Mrs. W. A. Seidler of Jamaica, in the chair. Routine matters of business were disposed of, program committees for the year were appointed, and delegates to the state convention were elected.

The program for the afternoon consisted of an effective summary of Hüloc Muller's "Triumph Over Pain," by Mrs. K. M. Chapler of Dexter; and the reporting of medical notes of interest by Mrs. C. E. Porter of Redfield, Mrs. H. F. Clark of Stuart, and Mrs. C. R. Osborne of Dexter.

In addition to this regular meeting, Auxiliary activities have included three very delightful dinner-bridges for members and their husbands. The March party was held in Guthrie Center; the April party in Jamaica; and the May party in Coon Rapids, at the special invitation of Dr. and Mrs. C. E. Wolfe of Carroll County.

Mrs. H. E. Haymond, Secretary

SOCIETY PROCEEDINGS

Bremer County

The combined monthly meeting of the Bremer County Medical Society and the staff of St. Joseph's Mercy Hospital, was held at the Fortner Hotel in Waverly, Wednesday, May 10. After the six-thirty dinner Dr. L. C. Kern of Waverly, delegate, reported on the transactions of the House of Delegates at the recent annual session of the Iowa State Medical Society.

O. C. Hardwig, M.D., Secretary

Dubuque County

Alto E. Feller, M.D., of the State University of Iowa, College of Medicine, Iowa City, was guest speaker for the Dubuque County Medical Society, at a meeting held in Dubuque, Sunday, May 14. Dr. Feller discussed the subject of Allergy.

J. J. Mueller, M.D., Secretary

Fayette County

The Fayette County Medical Society was host to the medical societies of Allamakee, Clayton and Winneshiek counties, at a meeting held in West Union, Tuesday, April 4. Robert F. Hansen, M.D., of the State Department of Health, Des Moines, presented an illustrated lecture on Syphilis.

Hardin County

The regular monthly meeting of the Hardin County Medical Society was held at the Winchester Hotel in Eldora, Tuesday, May 23. Following the six-thirty dinner, D. M. Nyquist, M.D., of Eldora, addressed the society on Infections of the Urinary Tract.

W. E. Marsh, M.D., Secretary

Jasper County

Julian M. Bruner, M.D., of Des Moines, addressed the Jasper County Medical Society, Tuesday, May 2, on The Ligation Treatment of Varicose Veins. The meeting was held at the Skiff Memorial Hospital in Newton.

Johnson County

Stuart C. Cullen, M.D., chief anesthetist at the University Hospitals, State University of Iowa, College of Medicine, Iowa City, was guest speaker for the Johnson County Medical Society, Wednesday, May 3, at the regular meeting of that organization in the Doctors' Dining Room in the Hospital. Dr. Cullen spoke on New Anesthetic Agents and Technics.

Jones County Annual Meeting

Dr. John H. Fraser of Monticello was recently elected president of the Jones County Medical Society. Dr. John D. Paul was renamed secretary and treasurer.

Lee County

Members and guests of the Lee County Medical Society convened in Fort Madison, Wednesday, May 10, for the regular meeting, at which time the following program was presented in the afternoon: Surgical Treatment of the Lungs and Pleura, Vernon W. Petersen, M.D., of Iowa City; Diagnosis and Treatment of Hay Fever and Asthma, Alto E. Feller, M.D., also of Iowa City; and Heart Disease, George B. Crow, M.D., of Burlington. A six o'clock dinner closed the session.

Monona County Annual Meeting

The Monona County Medical Society held its annual meeting Thursday, April 20, and elected the following officers to serve during the coming year: Dr. Clifford W. Young of Onawa, president; Dr. Max T. Wainwright of Mapleton, vice president; and Dr. Paul L. Wolpert of Onawa, secretary and treasurer.

Scott County

Nathaniel G. Alcock, M.D., of the State University of Iowa, College of Medicine, Iowa City, addressed the Scott County Medical Society at its regular meeting held in Davenport, Tuesday, May 2.

Preston E. Gibson, M.D., Secretary

Woodbury County

The May meeting of the Woodbury County Medical Society was held at the West Hotel in Sioux City, Tuesday, May 23. After the six-thirty dinner, Ralph H. Luikart, M.D., professor of obstetrics, Creighton University School of Medicine, Omaha, Nebraska, spoke on Indications for Interference During Labor and the Technic.

W. H. Gibbon, M.D., Secretary

Twin Lakes District Medical Society

The sixteenth annual assembly of the Twin Lakes District Medical Society will be held Thursday, June 15, at the High School building in Rockwell City. Beginning at nine o'clock in the morning, this all-day session will offer the following clinics: Medical Emergencies, Harold C. Habein, M.D., Rochester, Minnesota; Endocrinology, A. A. Werner, M.D., St. Louis, Missouri; Otolaryngology, William P. Wherry,

M.D., Omaha, Nebraska; Medicine, I. F. Volini, M.D., Chicago, Illinois; and Surgical Emergencies, Michael F. Mason, M.D., Chicago, Illinois. A round table discussion on Medical Economics is scheduled immediately after the noon luncheon, with Dr. E. E. Shaw of Indianola, presiding. Another feature of the afternoon program is an address on The Education of a Doctor, by Louis B. Wilson, M.D., of The Mayo Clinic, Rochester, Minnesota.

P. W. Van Metre, M.D., Secretary

PERSONAL MENTION

Dr. Everett M. George has opened offices in Des Moines at 617 Equitable Building, where he will specialize in the practice of orthopedics. Dr. George was graduated in 1931 from McGill University Faculty of Medicine, Montreal, Canada, and served his interneship at the Iowa Lutheran Hospital in Des Moines. He comes to Des Moines direct from New York, where he has been a resident staff member of the New York Orthopedic Dispensary and Hospital.

Dr. John H. Peck, superintendent of the State Sanatorium at Oakdale, has been named president elect of the American College of Chest Physicians at the annual meeting of that organization in St. Louis. He will assume the duties of the office on July 1, 1940.

Dr. Elmer L. DeGowin, Mr. John E. Harris and Dr. E. D. Plass, of the State University of Iowa, College of Medicine, Iowa City, were awarded the gold medal of the American Medical Association for their scientific exhibit at the annual meeting of that organization in St. Louis, May 15 to 19. Their exhibit, which illustrated the preservation of blood for transfusion, was adjudged as the most outstanding for its excellence of presentation.

Dr. Herbert H. Harris, who has practiced in Rockwell City for the past four years, has located in Battle Creek, where he will be associated with Dr. G. S. Millice in the new Battle Creek Hospital.

Dr. Carl F. Jordan of the State Department of Health, Des Moines, was guest speaker for a special meeting of health officers in Hampton, Wednesday, May 3, taking for his subject, "Control of Contagious Disease".

Dr. Edward S. Koziol, after four years' practice in Danbury, has moved to St. Helen's, Oregon, where he will take over the practice of Dr. L. G. Ross of that city.

Dr. Thomas R. Gittins of Sioux City was recently in New York, where he addressed the American Laryngological Association on "Headache: Differential Diagnosis", and the American Bronchoscopic Society on "The Acute Chest from the Bronchoscopic Standpoint".

Dr. Oscar H. Plant, head of the department of pharmacology, State University of Iowa, was elected president of the American Society for Pharmacology and Experimental Therapeutics at the annual meeting held in Toronto, Canada, April 26 to 29.

Dr. William I. Evans, who was graduated in 1935 from the State University of Iowa, College of Medicine, has located in Odebolt, where he will enter the private practice of medicine. He has been associated with the University in Iowa City since his graduation.

Dr. James P. Sharon of the State Department of Health, Des Moines, addressed the Sidney Parent-Teacher Association in Sidney, Wednesday, May 10, on "Social Diseases".

Dr. C. E. Buckley has moved from Baxter to Blockton, where he will take over the practice of the late Dr. B. H. Miller.

Dr. E. C. Kepler, who has practiced in Waverly since 1935, has moved to Greene, where he will enter the offices formerly occupied by Dr. S. E. Bigelow.

Dr. John M. Hayek of the State Department of Health, Des Moines, spoke in Washington, Thursday, April 6, at a meeting sponsored by the Chamber of Commerce. His address dealt with public health work, as it is conducted in Washington county.

Dr. Charles L. Kingsbury, formerly of Fort Wayne, Indiana, has located in Stanwood. He was graduated in 1936 from the University of Louisville School of Medicine, and completed his interneship at Tulane University of Louisiana School of Medicine, New Orleans.

Dr. John H. Stalford of Sac City, spoke on "Some Observations on Mental Health," for the meeting of the Kiwanis Club, held Monday, May 15, in Sac City.

Dr. Edward Nowak after practicing in New Hampton for more than sixteen years, has left that locality and gone to Philadelphia, where he will continue his work. Dr. John D. Caulfield, eye, ear, nose and

throat specialist, formerly of Chicago, will take Dr. Nowak's position with the New Hampton Clinic. Dr. Caulfield was graduated in 1930 from Loyola University School of Medicine, Chicago.

MARRIAGES

The wedding of Margaret Diesner Alexander of Minneapolis to Dr. C. Harlan Johnston of Des Moines, took place Saturday, May 13, at the Little Brown Church in Nashua. After a short wedding trip the young couple returned to Des Moines, where Dr. Johnston has been engaged in the practice of medicine for the past four years.

Miss Verna Lisle Byers of Detroit, and Dr. Emory L. Mauritz of Des Moines, were married Monday, May 1, in the First Church of Christ, in Davenport. They left immediately after the ceremony for an eastern wedding trip, and will return to Des Moines, where Dr. Mauritz is practicing.

DEATH NOTICES

Wassom, George Nathan, of Oelwein, aged fifty-eight, died May 8 after an illness of two years. He was graduated in 1907 from the University of Illinois, College of Medicine, Chicago, and at the time of his death was a member of the Fayette County Medical Society.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Council
April 2, 1939

The Council of the Iowa State Medical Society met at the Hotel Fort Des Moines in Des Moines, Sunday, April 2, at 11:00 a. m. Those present were: Doctors M. C. Hennessy, L. L. Carr, C. H. Cretzmeyer, F. P. Winkler, J. E. Reeder, E. B. Bush, C. W. Ellyson, F. P. McNamara, C. A. Boice, H. A. Spilman, J. G. Macrae, E. M. MacEwen, and E. D. Plass.

Matters considered and discussed were as follows: (1) An appropriation of $100,000 to be earmarked for care of indigent cancer patients at the University Hospital, to provide for follow-up over a five year period. Plan was approved by the Council and was referred to Cancer Committee and Legislative Committee. (2) The employment of non-licensed physicians by some state institutions. A committee was appointed to investigate the situation and report back to the next meeting of the Council. (3) Removed approval of allowing three physicians to serve on Board of Iowa Hospital Service Insurance Company. Meeting adjourned at 12:45 p. m.

Meeting of the Cancer Committee
April 2, 1939

The Cancer Committee of the Iowa State Medical Society met in Des Moines, Sunday, April 2, with the following members present: E. D. Plass, L. L. Carr, C. H. Cretzmeyer, F. P. Winkler, J. E. Reeder, E. B. Bush, C. W. Ellyson, F. P. McNamara, C. A. Boice, H. A. Spilman, J. G. Macrae, and M. C. Hennessy. Also present was E. M. MacEwen, Dean of the College of Medicine.

A motion was read regarding an appropriation of $100,000 to be earmarked for a cancer program at the University Hospital, passed by the Council and referred to the Cancer Committee. The recommendation was approved by the Cancer Committee and referred to the Legislative Committee of the State Society. Meeting adjourned.

Meeting of the Board of Trustees
April 7, 1939

The Board of Trustees of the Iowa State Medical Society met in the central office Friday noon, April 7, 1939. Those present were Doctors O. J. Fay, John I. Marker, and Lee R. Woodward.

Business transacted was as follows: (1) Minutes of previous meeting read and approved; (2) Bills authorized; (3) Medico-Legal Committee authorized to select an attorney for defending a physician in a malpractice suit; (4) Unapproved collection agent refused right to advertise in Journal; (5) Expenses of delegates, secretary, and office force to American Medical Association meeting authorized; (6) Expenses of past presidents' luncheon authorized; (7) Donation of prize to Medical Golfers' Association approved. Meeting adjourned at 2 p. m.

Meeting of the Council
April 25, 1939

The Council of the Iowa State Medical Society met in the Assembly Room of the Hotel Fort Des Moines Tuesday, April 25, with all members present. The following business was transacted: (1) Approval of minutes of previous meeting; (2) Report of committee appointed to investigate the number of non-licensed physicians in the state institutions, with discussion and adoption of a recommendation regarding the situation to the House of Delegates; (3) Discussion of previous action taken on cancer program, with decision to invite the Cancer Committee and Dr. MacEwen to attend a meeting May 26. Meeting adjourned.

Meeting of the Council
April 26, 1939

The Council of the Iowa State Medical Society met at 1:45 p. m. with all members present, and in addition Doctors MacEwen, T. A. Burcham, H. W. Morgan, W. H. Gibbon, and A. W. Erskine. Minutes of

previous meeting were read and approved, and the meeting adjourned to convene as a cancer committee.

Meeting of the Cancer Committee
April 26, 1939

The Cancer Committee of the Iowa State Medical Society met in Des Moines Wednesday, April 26, with the following members present: Doctors Carr, Cretzmeyer, Winkler, Reeder, Bush, Ellyson, McNamara, Boice, Spilman, Macrae, Hennessy, Burcham, Gibbon, and Morgan. Also present were Doctors MacEwen and Erskine.

Dr. Hennessy explained the reason for calling the meeting and Dr. MacEwen was given the floor to clarify the misunderstanding about the cancer program. Dr. Burcham next spoke on his ideas for a cancer program for the state, followed by Dr. Gibbon and Dr. Morgan. The Executive Cancer Committee was authorized to study the problem and bring back a recommendation. Meeting adjourned.

Meeting of the Council
April 27, 1939

The Council of the Iowa State Medical Society met at 10:15 a. m. April 27. Those present included the eleven councilors, Doctors Carr, Cretzmeyer, Winkler, Reeder, Bush, Ellyson, Householder, Boice, Spilman, Macrae, and Hennessy; and the retiring councilor, Dr. McNamara. Dr. McNamara introduced Dr. Householder, and spoke briefly of his pleasant associations with the Council. Dr. Winkler was chosen chairman and Dr. Bush secretary of the Council for the coming year. Meeting adjourned.

Meeting of the Committee on Child Health and Protection
May 28, 1939

The Committee on Child Health and Protection of the Iowa State Medical Society met in the central office at noon Sunday, May 28, 1939, with the following persons present: Doctors H. E. Farnsworth, R. H. McBride, H. A. Weis, C. P. Phillips, Roland Stahr and Lee F. Hill; Dr. H. E. Stroy, chairman of the Public Relations Committee; and Dr. J. M. Hayek and Mr. William Schultz of the State Department of Health.

The program for a campaign for smallpox vaccination, as approved by the House of Delegates, was discussed as to procedure, and definite details were formulated by the Committee. The Committee also approved of extending postgraduate education in pediatrics and obstetrics by intramural as well as extramural courses. It further suggested that each county society devote one meeting a year to a program on obstetrics, and pediatrics of the newborn, this to be part of the Speakers Bureau postgraduate work.

Meeting adjourned at 3:00 p. m.

COMING MEETINGS

Because we feel that many of the members of the Iowa State Medical Society may be interested in a number of national and special meetings, we are herewith publishing a calendar of the approaching sessions. More detailed information may be secured from the JOURNAL office.

Amercian Board of Ophthalmology. Examinations for 1939 are scheduled as follows: written, August 5; oral, October 6, Chicago. Secretary, Dr. John Green, 6830 Waterman Ave., St. Louis, Missouri.

Twin Lakes District Medical Society, June 15, High School, Rockwell City.

Eighteenth Annual Convention of the American Physiotherapy Association, June 25 to 30, 1939, Hotel Cosmopolitan, Denver, Colorado.

American Board of Internal Medicine. Written examinations will be held October 16, 1939 (formal application must be received by August 20, 1939); and February 19, 1940 (application must be received before January 1, 1940). Secretary, Dr. William S. Middleton, 1301 University Avenue, Madison, Wisconsin.

First American Congress on Obstetrics and Gynecology, September 11 to 15, 1939, Cleveland, Ohio. Address secretary at 650 Rush St., Chicago, Illinois.

Third Congress of the Pan-Pacific Surgical Association, September 15 to 28, 1939, Honolulu, Hawaii. Sail from Los Angeles, September 7, or San Francisco, September 8. Address Dr. George W. Swift, 902 Boren Avenue, Seattle, Washington; or Dr. Forrest J. Pinkerton, Young Building, Honolulu, Hawaii.

Fifth Annual Meeting of the Mississippi Valley Medical Society, September 27 to 29, 1939, Burlington, Iowa. Secretary, Dr. Harold Swanberg, Quincy, Illinois.

Forty-fourth Annual Convention American Academy of Ophthalmology and Otolaryngology, October 8 to 13, 1939, Palmer House, Chicago. Address Academy at 1500 Medical Arts Building, Omaha, Nebraska.

GRADUATE COURSE IN ELECTROCARDIOGRAPHY

The Cardiovascular Department of Michael Reese Hospital announces a full time intensive postgraduate course in electrocardiography under the direction of Dr. Louis N. Katz, for two weeks, beginning August 21 and ending September 2, 1939. Group and individual instruction will be given, and for this reason the course is open to both the beginner and advanced student in electrocardiography. The class will be limited in number so that those attending will be able to derive the greatest possible benefit from the course. Reservations should, therefore, be made at an early date. For further information address the Cardiovascular Department, Michael Reese Hospital, Twenty-ninth and Ellis Avenue, Chicago, Illinois.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

CLINICAL LABORATORY METHODS AND DIAGNOSIS—By R. B. H. Gradwohl, M.D., St. Louis. Second edition. The C. V. Mosby Company, St. Louis, 1938. Price, $12.50.

INFECTIONS OF THE HAND—By Allen B. Kanavel, M.D., late professor of surgery, Northwestern University Medical School. Seventh edition, thoroughly revised. Lea and Febiger, Philadelphia, 1939. Price, $6.00.

A MANUAL OF FRACTURES AND DISLOCATIONS—By Barbara Bartlett Stimson, M.D., associate in surgery, College of Physicians and Surgeons, Columbia University. Illustrated. Lea and Febiger, Philadelphia, 1939. Price, $2.75.

MEDICINE IN THE OUTPATIENT DEPARTMENT—By Winthrop Wetherbee, Jr., M.D., junior visiting physician, Boston City Hospital. Paul B. Hoeber, Inc., New York, 1938. Price, $1.00.

OUR COMMON AILMENT—By Harold Aaron, M.D., medical consultant to Consumers Union of United States. Dodge Publishing Company, 116 East 16th Street, New York, 1938. Price, $1.50.

PHYSICAL DIAGNOSIS—By Richard C. Cabot, M.D., professor of clinical medicine emeritus, Harvard University; and F. Dennette Adams, M.D., Harvard Medical School. Twelfth edition. William Wood and Company, Baltimore, 1938. Price, $5.00.

SCARLET FEVER—By George F. Dick, M.D., professor of medicine, University of Chicago; and Gladys Henry Dick, M.D. The Year Book Publishers, Chicago, 1938.

SUPERFLUOUS HAIR AND ITS REMOVAL—By A. F. Niemoeller, A.B., M.A., B.S., with a foreword by M. H. Marton, M.D. Harvest House, New York, 1938. Price, $2.00.

SURGERY OF ORAL AND FACIAL DISEASES AND MALFORMATIONS—By George van Ingen Brown, M.D., emeritus professor of plastic surgery, University of Wisconsin. Fourth edition. Lea and Febiger, Philadelphia, 1938. Price, $10.00.

SURGICAL PATHOLOGY OF THE DISEASES OF THE MOUTH AND JAWS—By Arthur E. Hertzler, M.D., professor of surgery, University of Kansas. J. B. Lippincott Company, Philadelphia and London, 1938. Price, $5.00.

TRAUMA AND INTERNAL DISEASE—By Frank W. Spicer, M.D. Illustrated. J. B. Lippincott Company, Philadelphia and London, 1939. Price, $7.00.

THE TREATMENT OF FRACTURES—By Charles Locke Scudder, M.D., formerly assistant professor of surgery, Harvard Medical School. Eleventh edition, revised. W. B. Saunders Company, Philadelphia and London, 1938. Price, $12.00.

BOOK REVIEWS

THE TECHNIQUE OF CONTRACEPTION

By Eric M. Matsner, M.D. Published for the National Medical Council on Birth Control, 501 Madison Avenue, New York. The Williams and Wilkins Company, Baltimore, 1938. Price, fifty cents.

The pamphlet by Dr. Matsner presents in a simplified form the indications for contraceptive advice and the methods of application, which may be helpful to the profession in general. However, it could hardly be recommended to the laity.

The space devoted to anatomic physiology and chemistry of contraception is, of necessity, limited in this brief discussion of the problem. Nevertheless, as a source for quick reference it may have a substantial value. L. D. S.

THE 1938 YEAR BOOK OF UROLOGY

Edited by John H. Cunningham, M.D., associate in genito-urinary surgery, Harvard University Postgraduate School of Medicine. The Year Book Publishers, Chicago, 1939. Price, $2.50.

The 1938 Year Book of Urology will be of interest to physicians in general, as well as to all specialists in this field. Urology is one of the most progressive branches of medicine, and it behooves all physicians to keep abreast of recent advances.

The urologic literature for 1938 is comprehensively yet concisely reviewed. Many American and European articles are included, and these are evidently chosen for their practical application. The illustrations, which are abundant, are especially well selected.

Such subjects as urinary infections, male endocrinology, and prostatic surgery are adequately summarized. New instrumental and technical branches are carefully described. To every physician this Year Book should be valuable; to every urologist it should be indispensable. J. M. B.

INFECTIONS OF THE HAND

By Allen B. Kanavel, M.D., late professor of surgery, Northwestern University Medical School. Seventh edition, thoroughly revised. Lea and Febiger, Philadelphia, 1939. Price, $6.00.

The seventh edition of this volume is a monumental work published since the author's death. It emphasizes the fact that a man's scientific efforts are immortal.

The material in the book is well edited, but the truths established cannot be grasped by hurried reading. Real concentrated study is required for the reader to digest the facts as set forth in this book. However, the knowledge acquired by time and study well repays one for the effort expended in acquiring it. This volume should be in the hands of every physician and surgeon and used freely. It takes up first the anatomy of the hand in detail, leaving nothing to the imagination and proving statements made concerning the extension of infection by actual dissections made in the laboratory. Many valuable plates are presented in order that one may visualize the various types of hand infections. The diagnoses of certain types of hand infections are carefully described. Infection of each digit and the palmar space is explained separately and the possibility of the spreading of infection is thoroughly taken up. Finally, careful description of treatments for the various types of hand infection are outlined. A chapter is also devoted to the re-education and development

of normal function following deformities and impairments which so commonly are aftermaths of delayed or improper treatment.

The reviewer not only feels that the book should be in the library of every physician, but he also recommends that it be studied and its scientific information applied when one is called upon to treat a patient with hand infection. L. D. P.

THE 1938 YEAR BOOK OF OBSTETRICS AND GYNECOLOGY

Edited by Joseph B. DeLee, M.D., professor of obstetrics, University of Chicago Medical School; and J. P. Greenhill, M.D., professor of obstetrics and gynecology, Loyola University Medical School. The Year Book Publishers, Chicago, 1939. Price, $2.50.

This book is a survey of all the literature on obstetrics and gynecology published in 1938, reviewing more than five hundred articles published in about sixty American and thirty-five foreign periodicals. These briefs should be of great value to the average busy physician who can find neither the time nor the money to cull through such an enormous amount of literature. The summaries are done so concisely that the reader can feel he has the complete essence of the original study. The arrangement of the book is such that any one subject may be easily found.

Of even greater value are the terse, amusing comments interspersed by the authors. These mean much to the average man because he can use the extensive experiences of the editors as a comparative yardstick by which he may measure his own reactions to the new and experimental work.

The volume can be recommended to any general practitioner, not only as educational, but also as enjoyable reading. M. M. D.

THE FORM AND FUNCTIONS OF THE CENTRAL NERVOUS SYSTEM

By Frederick Tilney, M.D.; and Henry A. Riley, M.D. Third Edition. Paul B. Hoeber, Inc., Medical Book Department of Harper Brothers, 1938. Price, $10.00.

The third edition of this volume amplifies the fundamental, structural and physiologic factors of the central nervous system, which has made this work a standard guide since its first edition in 1920. The present volume, published late in 1938, clarifies many new advances in cerebral localization and is a distinct aid to further understanding of various isolated functions of the cerebral cortex. A radical departure in the manner of discussing the various forms and functions of the cerebellum has shed much light in the confusion of darkness of this organ because of the many divergent views of neurophysiologists. The photography of the previous cuts and simple coordination of clinical symptoms will prove to be of definite value to the beginner in neurology, and an aid to the practitioner who desires a ready reference.

The publication of this third edition is saddened by the death of Paul Hoeber whose profound vision has been responsible for the publication of many practical medical works, and by the loss of one of the co-authors, Frederick Tilney, who died on August 7, 1938. Doctor Tilney has left behind a host of friends and admirers who have leaned heavily upon him for guidance throughout his long years of devotion to neurology and literature of this medical specialty. Elsberg in writing Tilney's obituary says, "His life was gentle and the elements so mixed in him that Nature might stand up and say to all the world, 'This was a man'." W. D. A.

THE 1938 YEAR BOOK OF NEUROLOGY, PSYCHIATRY AND ENDOCRINOLOGY

Edited by Hans H. Reese, M.D., professor of neurology and psychiatry, University of Wisconsin Medical School; Harry A. Paskind, M.D., associate professor of nervous and mental diseases, Northwestern University School of Medicine; and Elmer L. Sevringhaus, M.D., professor of medicine, University of Wisconsin Medical School. The Year Book Publishers, Chicago, 1939. Price, $3.00.

This comprehensive appraisal of the work accomplished during the past year in the fields of neurology, psychiatry and endocrinology carries the reader through avenues of new medical exploit. It is a concrete resumé of the thought and content of modern medical science.

Dr. Reese gives a complete discussion of the advances in neurology during 1938, and stresses the need of closer association between the clinic and the laboratory. Included in this part of the volume are a survey of sulfanilamide therapy in diseases of the meninges, a thorough explanation of diagnostic procedures in diseases of the brain, and a separate section dealing with syphilis of the central nervous system and spine and spinal cord diseases.

Dr. Paskind edits the important advances in the rapidly growing field of psychiatry. He emphasizes the psychoneuroses and the functional and organic psychoses, and one is interested to note that he criticizes the recent conceptions of the mental development of defectives and psychiatry as expressed in the child.

Dr. Sevringhaus has compiled all the important material that 1938 has given to endocrinology. The foreword contains a critical epitome of the status of present day standards and preparations of glandular extracts. The functions of the three divisions of the pituitary gland are discussed. Some special tests for pituitary and thyroid dysfunctions are evaluated. New theories of diabetic etiology are enumerated. Many new syndromes and their complex relationships to normal physiologic phenomena are included in this review. Further investigations seem certain to disclose important therapeutic measures.

This volume contains a wealth of material for those directly interested in three rapidly advancing departments of medicine. J. W. C.

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TREATMENT OF HYPOPARATHYROIDISM

With a Discussion of the Use and Action of Dihydrotachysterol (A.T. 10)*

JAMES A. GREENE, M.D.,
and
L. W. SWANSON, M.D., Iowa City

Until recently the treatment of the more severe form of chronic hypoparathyroidism has not been successful. It has not been possible to control the disease by diet supplemented by calcium, and, moreover, a tolerance to parathyroid hormone may develop.

Tachysterol, a sterol related to Vitamin D and derived from irradiated ergosterol, was found to raise the blood calcium, and was used successfully in the treatment of parathyroid tetany by Holtz, Gissel, and Rossmann[1], in 1934. Dihydrotachysterol (A.T. 10), which is soluble in oil, is just as effective and can be administered orally. The therapeutic effect of the latter preparation in hypoparathyroidism has been confirmed by several investigators in Germany, and by Albright, et al.[2], MacBryde[3], Arnold and Blum[4], Swinton[5], Pickhardt and Bernhard[6], in America.

The purpose of this report is to discuss the treatment of hypoparathyroidism, the therapeutic action of A.T. 10, and to record five additional cases in which the treatment by means of this preparation was successful.

Case 1. A single white woman, thirty-five years of age, was first admitted to the University Hospital September 16, 1929, because of a large, nodular, non-toxic goiter. The enlargement of the thyroid was first noted when the patient was twelve years of age, and the right lobe was removed when she was twenty-two years of age. The left lobe was removed after admission to the hospital, and tetany developed four days later. This was partially controlled by the administration of large doses of calcium salts and parathyroid extract. When she was discharged she was given calcium salts alone, but this medication was inadequate. Subsequently, she developed tetany again and returned to the hospital December 17, 1929. The administration of parathyroid extract, calcium salts, and dessicated thyroid gland produced slight symptomatic improvement, but the serum calcium and phosphorus failed to return to normal levels. Nevertheless, the patient was permitted to return home. She came back to the hospital April 24, 1937, because tetany had persisted and cataracts had developed. The blood calcium and phosphorus were 5.5 and 6.3 milligrams per cent, respectively. Slight symptomatic improvement followed the daily administration of eleven grams of calcium lactate in solution orally and 100 units of parathyroid extract intramuscularly. The serum calcium and phosphorus, however, were not altered. The above medication was supplemented by giving calcium gluconate intravenously. Following this the serum calcium increased to 7.4 milligrams per cent. One cataract was then removed. She was later discharged with advice to continue taking parathyroid extract and calcium lactate. She returned to the hospital December 13, 1937, for removal of the other cataract. The tetany was more pronounced than on previous admissions and she was very much discouraged. The serum calcium and phosphorus were 6.2 and 6.4 milligrams per cent, respectively. At this time she was placed on a general hospital diet, and A.T. 10 was prescribed in doses of 1.5 cubic centimeters daily for six days, with a five cubic centimeter dose on the seventh day. There was only slight improvement. The serum calcium and phosphorus, however, were not altered as late as the thirteenth day after beginning the medication. The results of calcium and phosphorus balance studies are shown in Table I. The treatment was then changed to a diet low in calcium and phosphorus, supplemented by 20 grams daily of calcium lactate in solution orally for ten days. This resulted in a rise in serum calcium to 8.5 milli-

*From the Department of Internal Medicine, State University of Iowa, College of Medicine.

grams per cent. The addition, then, of daily doses of two cubic centimeters of dihydrotachysterol by mouth increased the serum calcium to 11.8 milligrams within a period of nine days. The results of calcium and phosphorus balance studies are shown in Table II. There was a remarkable symptomatic improvement. The numbness, twitching, restlessness, irritability, pains in the back, and depression promptly disappeared. She was discharged with instructions regarding a general diet and advised to take 0.5 of a cubic centimeter of A.T. 10 daily. She was still free from symptoms one month later and considered herself well. The serum calcium and phosphorus at this time were 8.1 and 5.3 milligrams per cent, respectively.

Case 2. A single white girl, eighteen years of age, entered the University Hospital for the first time June 30, 1927, because of exophthalmic goiter. There were no complications following thyroidectomy and she went home. The patient returned to the hospital in September, 1932, because of twitching of the hands and face and convulsive attacks which began one month after thyroidectomy. A diagnosis of chronic parathyroid tetany was made; the serum calcium and phosphorus were 5.6 and 6.7 milligrams per cent, respectively. The patient refused treatment. She re-entered the hospital May 4, 1938, for treatment of the tetany. The serum calcium was 6.4 milligrams, and phosphorus 7.0 milligrams per cent. The symptoms subsided and the serum calcium rose to 9.6 milligrams following the administration of a high calcium and phosphorus diet and five grams of calcium carbonate daily for twelve days. However, after twenty-two days of a low calcium diet the serum calcium declined to 7.3 milligrams and was unaltered after five days on a general diet. The addition of A.T. 10, four cubic centimeters the first day, three cubic centimeters the second day, and two cubic centimeters daily thereafter for ten days, resulted in an increase of the serum calcium to 10.0 milligrams per cent. She was sent home with instructions regarding a low calcium and phosphorus diet and advised to take a daily dose of 20 grams of calcium lactate in solution orally. Nine months later she was free of symptoms; the serum calcium was 10.1 milligrams, and phosphorus 6.1 milligrams per cent.

Case 3. A married white woman, sixty-three years of age, entered the University Hospital May 8, 1938, for recurrent hyperthyroidism. A subtotal thyroidectomy was performed and convulsive seizures began twenty-three days later. The serum calcium was 4.6 milligrams per cent. Following three days of intravenous administration of calcium gluconate and 200 units of parathyroid hormone daily the symptoms were unabated, although the serum calcium increased to 6.1 milligrams per cent. The above medications were then omitted, and A.T. 10 was prescribed in doses of four cubic centimeters the first day, three cubic centimeters the second day, and two cubic centimeters daily thereafter for nineteen days. Convulsions ceased on the second day and the serum calcium rose to 10.6 milligrams on the sixteenth day. Convulsions reappeared on the nineteenth day, at which time the serum calcium was found to be 13.0 milligrams per cent. The medication was then omitted and the convulsions ceased two days later. The serum calcium declined to 10.4 milligrams per cent on the fifth day.

Case 4. A married white woman, forty-two years of age, entered the University Hospital in May, 1935, because of bilateral cataracts and twitching of the hands. She had enjoyed good health until hyperthyroidism had made its appearance five years before. Following thyroidectomy she had developed chronic tetany. Between 1935 and September, 1938, she was treated with a high calcium and phosphorus intake, a high calcium and low phosphorus intake, and with various dosages of parathyroid extract, without effect. The serum calcium and phosphorus in September, 1938, were 5.7 and 6.7 milligrams per cent, respectively. The administration of a general diet and A.T. 10 in the same doses prescribed for the two preceding patients resulted in a decrease of her symptoms by the third day and complete disappearance of all symptoms by the seventh day. The serum calcium rose to 10.0 milligrams per cent on the twenty-second day. A maintenance dose of one cubic centimeter of A.T. 10 every other day was continued for fourteen days, at which time the serum calcium had declined to 8.4 milligrams per cent. There was no return of symptoms. She went home with instructions to maintain a low phosphorus and normal calcium intake and to take the above dose of A.T. 10. She was still free of symptoms three months later and the serum calcium was 8.0 milligrams per cent. The daily calcium intake was then increased to 20 grams in solution orally and the serum calcium increased to 9.4 milligrams per cent two weeks later.

Case 5. A white widow, sixty-nine years of age, entered the University Hospital July 23, 1938, complaining of choking sensations, dyspnea, and hoarseness. She had enjoyed good health until sixteen years before, when a non-toxic goiter had been removed. She was not well following the thyroidectomy, but she had no specific complaint until the above symptoms appeared three weeks before admission. She was found to have chronic tetany with a serum calcium of 6.7 mil-

ligrams per cent. Treatment with a low calcium and phosphorus diet, supplemented with daily doses of 20 grams of calcium lactate in solution orally, failed to alter her symptoms or serum calcium. However, following the administration of a general diet and A.T. 10 in the same doses given in previous cases, the symptoms disappeared in five days and the serum calcium increased to 10.0 milligrams per cent in eighteen days. A maintenance dose of one cubic centimeter of A.T. 10 every other day was then given and the serum calcium declined to 9.0 milligrams per cent in fifteen days. She was sent home with instructions to maintain a low phosphorus and normal calcium intake and to continue the above dose of A.T. 10. Two months later she was free of symptoms and the serum calcium was 9.0 milligrams per cent.

COMMENT

Dihydrotachysterol has been used in a sufficient number of cases of hypoparathyroidism to establish its therapeutic value. In proper dosage it brings the serum calcium and phosphorus to normal levels, produces symptomatic relief, and is said to prevent cataracts.

The required dosage of A.T. 10 varies in the different cases and depends upon the severity of the malady and the amount of calcium and phosphorus ingested. A larger daily dose is required to increase the serum calcium than to maintain it at a normal level. Holtz[7] used weekly doses of two to five cubic centimeters in the mild cases and reduced the dose after the serum calcium became normal. MacBryde[3] obtained elevations of serum calcium with daily doses of 0.25 to 1.5 cubic centimeters, and used maintenance daily doses of 0.33 to 0.5 cubic centimeters. Larger doses are necessary in acute or severe cases. The largest dose we have administered is seven cubic centimeters in two days and fifty-three cubic centimeters in twenty-five days, but Martini and Heymer[8] reported a case in which ten cubic centimeters were required daily for two weeks.

During administration of the drug the patient should remain under very careful observation until the serum calcium reaches a normal level and until the maintenance dose is ascertained. Large doses should not be continued longer than two or three days except in extremely rare instances. The acute toxic manifestations of overdosage are apparently similar to those of an overdosage of parathyroid extract, namely, hypercalcemia, nausea, vomiting, diarrhea, respiratory distress, and circulatory collapse. A slight overdosage over long periods may produce metastatic calcification. The serum calcium level should be ascertained in such patients at sufficiently frequent intervals for the physician to be sure that hypercalcemia does not exist. The drug has a cumulative action and should not be administered unless the patient remains under careful observation. Harmful manifestations apparently do not occur from A.T. 10 over long periods when given in proper doses. One patient cited by Holtz[7] was still taking the drug without deleterious effect after three years. Another patient died from an unrelated cause after taking A.T. 10 for two years; metastatic calcification had not occurred.

It is preferable to keep the dose of dihydrotachysterol as low as possible, if for no other reason than the expense. The required dosage can be decreased by increasing the calcium and reducing the phosphorus intake. It is relatively less expensive to administer a low calcium and low phosphorus diet supplemented by calcium salts and smaller doses of A.T. 10 than it is to prescribe a diet of average calcium and phosphorus content and larger doses of the drug. The cost of dihydrotachysterol is approximately fifty cents per cubic centimeter.

MacBryde emphasized that the required dosage of A.T. 10 is reduced by increasing the calcium intake, but he did not mention the effect of reducing the phosphorus. Shelling and Goodman[9] and Freyberg, Grant, and Robb[10] showed that in certain chronic cases the disease can be controlled by a high calcium and low phosphorus intake, whereas it could not be controlled with a high calcium and an average phosphorus intake. That the dosage of A.T. 10 can be reduced by lowering the phosphorus intake is shown in Cases 1, 4, and 5 of this series. It is necessary to prescribe a diet low in calcium and phosphorus, supplemented by calcium salts, to obtain a high calcium and low phosphorus intake, because the foods high in calcium are also high in phosphorus. Meats, on the other hand, are low in calcium and high in phosphorus. Usually a general diet without milk and dairy products and with little meat will give an adequate reduction in phosphorus intake.

The calcium salts most frequently prescribed are the lactate, chloride, and gluconate. There is a greater absorption of calcium when the salts are administered orally in solution than when they are given as a powder, in capsules, or suspended in water. Calcium phosphate salts are contraindicated because the phosphorus content counteracts the beneficial effect of the calcium. The chloride was advocated by Aub, et al.[11], because it is an acid salt and therefore produces additional mobilization of calcium. However, according to Freyberg, et al.[10], the lactate was just as effective as the chloride, provided adequate doses of each were given, and produced less gastric disturbance. The

minimum effective dose of each salt was found to be from twelve to twenty grams daily. It is to be noted from Table II (Case 1) that the serum calcium was elevated following treatment with a low calcium and phosphorus diet supplemented by twenty grams of calcium lactate daily.

Dihydrotachysterol controls hypoparathyroidism by increasing the urinary excretion of phosphorus and the absorption of calcium from the enteric tract. This action is shown in Tables I and II and has been confirmed previously by Albright, Bloomberg, Drake, and Sulkowitch[2]. It has a greater effect upon the serum calcium than does Vitamin D, and does not prevent rickets. Its action differs from parathyroid hormone in several respects. Both increase the urinary excretion of phosphorus, whereas A.T. 10, in addition, produces a greater absorption of calcium from the enteric tract, and has a cumulative action and a slower and more prolonged effect, and it can be administered orally; furthermore, a tolerance does not develop.

The following is a summary of the treatment of hypoparathyroidism:

1. Diet: A diet which has a low calcium and phosphorus content.
2. Calcium: Daily doses of ten to twenty grams of the lactate, gluconate, or chloride should be administered in solution orally.
3. Vitamins: Vitamins D and A are necessary because the above diet is likely to be deficient in them.
4. Parathyroid hormone: The hormone should be reserved for the acute or severe cases in which immediate effect is desired.
5. Dihydrotachysterol: A.T. 10 should be used in the more severe chronic cases as a supplement to dietary and calcium therapy.

In many of the milder chronic cases the disease can be controlled by the addition of calcium salts to a general diet (Case 2). In the moderately severe cases a diet low in calcium and phosphorus, supplemented by calcium salts will be required. In the more severe chronic cases A.T. 10 will also be needed. (Cases 1, 4, and 5.) Parathyroid hormone and intravenous calcium therapy are indicated in severe tetany; the subsequent therapy in such cases will depend upon the severity. Dihydrotachysterol is valuable in the treatment of chronic hypoparathyroidism, but it should be regarded as a therapeutic adjunct, not as the sole treatment of the disease.

SUMMARY

The inadequacy of previous therapeutic measures in certain cases of chronic hypoparathyroidism has been overcome by the addition of dihydrotachysterol to our therapeutic armamentarium. Five cases in which the drug has been employed are reported. Dihydrotachysterol has a cumulative action and toxic manifestations appear with overdosage. The therapeutic action of the drug is discussed and the treatment of hypoparathyroidism is summarized.

TABLE I

	Period I Four Days' Duration No Medication		Period II Four Days' Duration 1.5 cc. A.T. 10 Daily	
	Calcium Mg.	Phosphorus Mg.	Calcium Mg.	Phosphorus Mg.
Blood:				
Beginning	6.3	5.9	6.2	6.4
End	6.2	5.9	6.6	7.3
Daily Averages:				
Food	1242	1382	1242	1382
Urine	18.9	469	18.8	865
Feces	959	651	499	227
Daily Urine:				
1	23.6	510	14.1	734
2	16.9	444	20.4	856
3	21.2	413	21.8	861
4	14.1	509	31.0	918
5			20.9	866
6			9.4	935
7			17.9	959
8			14.9	792

Table shows a greater absorption of calcium and phosphorus from the enteric tract and a greater urinary excretion of phosphorus following the administration of A.T. 10 in Case I while the patient was on a diet of average calcium and phosphorus content.

TABLE II

	Period I Four Days' Duration No Medication		Period II Four Days' Duration A.T. 10, 4,3,2 & 2 cc. Doses	
	Calcium Mg.	Phosphorus Mg.	Calcium Mg.	Phosphorus Mg.
Blood:				
Beginning	8.5	4.4	8.6	5.0
End	8.6	3.8	10.0	5.8
Daily Averages:				
Food	399	828	399	828
Calcium as Calcium lactate	2414		2504	
Urine	58	313	93	332
Feces	2989	457	2596	332
Daily Urine:				
1	38	447	40	140
2	57	442	65	274
3	59	193	134	469
4	75	170	133	444

Table shows an increase in serum calcium, a greater absorption of calcium and phosphorus from the enteric tract, and a greater urinary excretion of phosphorus and calcium following the administration of A.T. 10 in Case 1 while the patient was on a high calcium and low phosphorus intake.

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MEDICO-LEGAL ASPECT OF ALCOHOL IN ROAD ACCIDENTS*

Judge T. G. Garfield, Ames, Iowa

The medical profession has accomplished a great deal for the good of the public. You have made remarkable scientific progress. You do almost unbelievable things in the field of surgery and are no less resourceful in the prevention and treatment of disease. You are ever striving to improve existing methods; and the public reaps the benefit. It seems to me it may fairly be said that of all the professions yours is the most energetic in keeping step with the times and in solving the problems that confront you. Surely you are ahead of the legal profession in this regard.

Medical science has made many contributions to the law and the courts. The matter of which I am about to speak is but one of them. For this contribution the public will some day, if it does not now, feel deeply grateful to members of your profession, especially those whose efforts have largely been responsible for what use has been made of the blood test method of determining intoxication.

The purpose of taking testimony in court is merely to ascertain the truth. To be sure, all concerned in court trials sometimes lose sight of this fact. Indeed the charge is sometimes made that the purpose of hearing testimony in court apparently is suppression, concealment, or distortion of the truth, rather than a search for it. Strangely enough, too, no matter how great the effort or how sincere the desire, it is frequently hard to determine the unvarnished truth in matters even of everyday occurrence. It is often difficult to tell whether a person was intoxicated at a given time. Up to now, the principal method of proving intoxication in court has been to call witnesses who observed the person in question at the time inquired about, and have them express their opinions as to his intoxication. This is often an unsatisfactory and uncertain method of proof. There is no class of testimony, even from honest witnesses, that is more in conflict than opinion evidence. The question of intoxication arises in court many times more frequently than it did, say, fifteen years ago, and because of the numerous cases of drunken driving. District courts have many more cases of drunken driving of motor vehicles than of any other criminal offense. Because of the large number of these cases and the time of the courts which is consumed in their consideration, it is important that some more satisfactory method of proving intoxication be found than mere opinions of non-expert witnesses who happen to have seen the person whose sobriety is questioned.

However, there is another and more important reason for a more reliable proof of drunkenness of motor vehicle drivers to be found. Drunken driving is a menace to the safety of the public and where the crime is committed, it should be effectively prosecuted, to the end that the offender may be punished and others who are tempted to commit the offense may be discouraged from so doing. Likewise if the driver is not intoxicated it is important from his standpoint that his sobriety be reliably established to the end that he may not be prosecuted for a crime of which he is innocent.

The most aggravated and dangerous instances of drunken driving very frequently result in accidents. Accidents are much more common among drivers who have been drinking (whether drunk or not) than among those who have not been drinking. Not only is opinion evidence on the question of intoxication often unreliable, but it is frequently hard to tell from the conduct and appearance of a driver who has been involved in an accident whether he was intoxicated at the time. Frequently, the shock of an accident has a sobering effect upon a drunk man. There are many common explanations of signs of intoxication that are sometimes difficult to rebut. If witnesses are produced who testify that the driver was unsteady on his feet, a common avoidance is that this condition was caused by some injury sustained in the accident. Unusual appearance or manner of speech are said to have been caused by shock, rather than by alcohol. Alcohol on the breath is said to have been caused by one or two drinks only. Of course it is true that some of the common symptoms of drunkenness may be caused by something other than alcohol, but they are usually the result of its use.

It is believed that the use of blood and urine tests is a significant aid in proving in court the question and degree of intoxication. It is a much more definite and certain method of proof than opinion evidence or evidence of appearance and conduct which is often subject to sufficient explanation to raise a reasonable doubt in the minds of the jury. Surely, there is no reason why the amount of alcohol in the blood and urine cannot be measured to a practical certainty. Furthermore, it would seem that the amount of alcohol in

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one or both of these body fluids would indicate the amount of alcohol consumed and the degree of intoxication with fair accuracy. At least there seem to be sufficient accuracy and reliability to such a test to entitle it to be received in evidence in court to prove a question heretofore largely provable by the unsatisfactory opinions of non-expert witnesses. It is reasonable to believe that practice and experience in making these tests by capable technicians will make for even greater certainty than has yet been attained. It must be remembered that if a blood or urine test will prove drunkenness it will also prove sobriety, just as reliably. It should be in the interest of the public to have a blood test made of all drunken drivers and equally in the interest of all mistakenly accused of drunken driving to have such a test made.

There can be no serious question as to the admissibility in court of blood and urine test evidence where the defendant voluntarily submits to the test. In the several cases of which I have had personal knowledge, no defendant has objected to the sampling of his blood or urine for this purpose. It would seem that a refusal on his part would be a circumstance tending to show guilt. If a driver is not drunk he has nothing to lose, but everything to gain, by consenting to a test of his blood and urine. Therefore, an accused can scarcely afford for his own sake to object to the test. It is important, however, that the right of the prosecution to take a blood test be established, whether the accused gives his permission or refuses it; whether or not he is so drunk as to be able voluntarily to consent. If the right does not exist under the present law to take a blood and urine test in substantially all cases of drunken driving, the law should promptly be changed to permit the introduction of this important evidence.

What are the reasons that have been thus far advanced in attempts to keep blood and urine tests from being shown in evidence? The claim most strenuously made is that the evidence is a violation of the rule that one accused of crime cannot be compelled to be a witness against himself; that it is self-incrimination, a violation of so-called constitutional and statutory rights. It is the view of most of those who have studied this comparatively new question that there is no violation of any statutory or constitutional immunity from self-incrimination in connection with blood or urine tests. The constitution of Iowa contains no provision against self incrimination. Of the other forty-seven state constitutions, New Jersey alone is like Iowa in this respect. The provision in the fifth amendment to the federal constitution that "No person . . . shall be compelled in any criminal case to be a witness against himself" has uniformly been held to apply only to the federal courts, which have no jurisdiction over drunken driving. There are two legislative enactments in Iowa bearing on the question. One provides: "Defendants in all criminal proceedings shall be competent witnesses in their own behalf, but cannot be called as witnesses by the state." The other provision is: "When the matter sought to be elicited would tend to render a witness criminally liable . . . he is not compelled to answer, except as otherwise provided." It is to be observed that both of these statutory provisions purport only to exempt a person from incriminating himself by testifying in court.

Doubtless the statutory rule against self-incrimination applies not only to testimony given in court but also to admissions and confessions made outside of court; that is, a person cannot be forced outside of court to confess guilt, anymore than as a witness in a trial. It is the prevailing view, certainly the more enlightened one, that the rule against self-incrimination applies only to spoken or written testimony or utterances, and does not protect an accused from furnishing so-called real evidence of guilt, such as his photograph, his fingerprints, his shoes for the purpose of comparing them with footprints, articles of clothing, inspection of his body for scars and marks of identification and weapons concealed about the person. It is quite apparent that testimony regarding blood and urine tests is of the same character and its admissibility should be governed by the same rules as these other examples of so-called real evidence.

There is good reason for excluding evidence of admissions of guilt which are forced from an accused, while receiving in evidence testimony pertaining to such matters of fact as above referred to even though such testimony may have been procured without the defendant's consent. Probably the principal reason for confessions of guilt not being admissible in evidence if they are obtained by third degree methods is that they are presumed to be unreliable; the victim is likely to confess a crime of which he is innocent because he has been forced to do so. The reliability of blood or urine tests, however, is in no manner affected by the willingness or unwillingness of the individual to submit to the test. The result is the same whether he consents to the sampling of his blood or urine or submits involuntarily.

In 1902 a case entitled State of Iowa v. Height was decided by the Supreme Court of Iowa which held that evidence was inadmissible of a forced medical examination of a defendant charged with rape, for the purpose of showing the defendant was afflicted with the same venereal disease that

was communicated to the girl at the time of the crime. This case is the principal judicial authority in Iowa for the claimed inadmissibility of blood and urine tests to show drunkenness. The decision above referred to is based upon the double ground that the testimony would violate, at least by implication, the provision of the state constitution and the fourteenth amendment to the federal constitution that no person shall be deprived of his liberty without due process of law and that the testimony would violate the constitutional provision against unreasonable search and seizure. The Height case has been frequently criticised in later decisions and by text writers. Insofar as this 1902 case applies the oft invoked and much abused due process clause, it has been criticised by the Supreme Court of the United States. Later decisions of our state Supreme Court have held it proper to receive in evidence articles obtained by a search without any search warrant. Therefore, it does not seem that our courts should exclude evidence of blood tests on the authority of the case decided thirty-seven years ago, in the face of later inconsistent decisions.

Another complaint made in various ways is that it is a personal indignity for an individual to submit to the removal of blood from his veins to be tested for alcoholic content; that one's person has the right to be immune from any such acts of forced familiarity. This claim is without merit. Courts have frequently and generally recognized the validity of much more pronounced invasions of the sacredness of the person. The right of courts to order a physical examination of a party to a civil suit has been frequently recognized. Compulsory vaccination has been repeatedly upheld, as have statutes providing for compulsory tests for venereal disease as a prerequisite to the issuance of a marriage license. Likewise compulsory blood tests as evidence of paternity have been upheld in court. Speaking of blood tests in paternity cases, it may be of interest to note that the highest court in the state of Ohio recently held that a jury verdict should not be permitted to stand where it was contrary to the testimony of the expert who tested the blood of the man claimed to have been the father of the child.

What weight do juries, as a practical proposition, give to evidence as to the alcoholic content of the blood or urine of a driver? In the cases tried before me, such evidence has been listened to attentively and given considerable weight. In one case where drunken driving resulted in the death of three innocent persons, upon a trial for manslaughter, blood test evidence was not offered. This proved to be a serious mistake. The jury, after deliberating more than twenty-four hours, acquitted the driver. At the following term of court he was tried on a charge of drunken driving and promptly convicted. Evidence of blood test was received in the second trial. It seems quite probable that the first trial would have resulted in conviction had the blood test evidence been used.

One question which should be of some interest to physicians is their right to testify regarding blood tests in view of the statute on privileged communications. Our legislature has enacted a law reading as follows: (Code Section 11263):

"No practicing attorney, counselor, physician, surgeon, or the stenographer or confidential clerk of any such person, who obtains such information by reason of his employment, minister of the gospel or priest of any denomination, shall be allowed, in giving testimony, to disclose any confidential communication properly intrusted to him in his professional capacity, and necessary and proper to enable him to discharge the functions of his office according to the usual course of practice or discipline."

Such a statute as just quoted is in effect in twenty-nine of the forty-eight states. Whenever a physician testifies for the state in a criminal case to any contact whatever between himself and the person on trial, this statute is almost invariably invoked by the defendant in an attempt to exclude the testimony. Courts, especially the Iowa Supreme Court, have given a broad scope to this statutory privilege. Our Iowa court has held that the prohibition covers not only communications but matters of observation as well, if the relation of doctor and patient exists. Therefore, a doctor cannot safely testify to observations made by him of his patient during the existence of the relationship. Also, our court has held it is not necessary that the physician be called by the person in question. If someone else calls the doctor, the relationship of physician and patient exists just the same. Of course, no fault can be found with this ruling, since very frequently the patient himself does not call the physician, but the call is made by someone else with or without the prospective patient's authority.

It frequently happens that a defendant in a drunken driving case has received some injury in the accident which was likely to result from his presence in a drunken condition, at the wheel of a car. If the doctor who may be called to take a sample of blood or urine for its alcoholic content plays the Good Samaritan and prescribes any treatment or gives any advice to the injured driver he probably becomes the driver's physician and precludes himself from testifying. It is better to

have any necessary treatment administered by some physician other than the one who may be called to withdraw the specimen for purposes of analysis. This will obviate the objection that testifying to the removal of the blood is a violation of the statute against privileged communications which has received such a broad interpretation by our court.

Perhaps attention should be called to the necessity of using care to seal the container in which the specimen of blood or urine is placed, and to see that it is delivered to the chemist or other expert who is to test it in the same condition as when it was taken from the patient. The fact of such delivery must be proved upon the trial before the results of the test are receivable in evidence. It is advisable to have the sealed container personally delivered to the chemist by some reliable individual who will be available as a witness.

To summarize the foregoing, it seems self evident that all sane persons, regardless of their personal views on the use of liquor, should be greatly interested in making our highways much safer than they now are for themselves, the members of their family and the public generally. If drunken driving can be stopped or materially lessened it will increase highway safety. Anything that will assist in effective prosecution of drunken drivers is a move in the right direction. There is every indication that the use of blood and urine tests for alcohol is extremely useful in drunken driving cases. This evidence has been received in the courts of this state only during the past two years; but that has been time enough to demonstrate the wisdom of using this evidence. No technical rules of law should long stand in the way of its admissibility. I believe the evidence is proper and legitimate under the law as it now exists. I believe the Supreme Court of our state will so hold. If courts hold otherwise and exclude this important blood test evidence, legislation should promptly be sought to remedy such a situation to the end that courts and juries may have the benefit of this evidence.

THE EFFECTS OF ALCOHOL ON DRIVING*

A. R. LAUER, Associate Professor Psychology, Iowa State College, Ames, Iowa

THE PROBLEM

The problem of drinking and automobile driving is daily becoming more acute as the speed of automobiles increases and the traffic density becomes greater. The courts are trying to solve the problem from the legal angle. They are puzzled by definitions, severity of penalties made mandatory by statutes, fixing, pathologic symptoms of non-alcoholic origin, constitutional rights of the alleged violator and dozens of other angles peculiar from the point of view of the legal profession.

Traffic enforcement groups are never quite sure of a case designated as "under the influence". The medical profession has hastened to the rescue with ways and means of measuring the amount of alcohol in the saliva, the breath, the urine, or the blood. Much progress has been made in the methods of analysing the alcohol content in the various body fluids. These data are all valuable and fundamentally important, yet we still have another basic question to answer, "How much must a man drink to render him a dangerous driver?" Here again is a puzzling question. Some drivers are dangerous without even taking a drink. "How much alcohol does it take to reduce the efficiency of a driver to a point where he is incapacitated and should be taken off the road?" Here lies the crux of the problem. It is our purpose to present known facts relating to the effects of moderate amounts of alcohol on the human body and to try to demonstrate some of the obvious effects of alcohol on performance of a nature related to automotive performance.

Before going into the more practical aspects, let us review some of the known facts regarding alcohol and its action on the human organism. It must be remembered that bacteria in the body create a trace of alcohol, to the extent of about .0004 per cent in the brain, .0025 per cent in the liver, and .004 per cent in the blood. However, these quantities are almost negligible. The person of average size will dispose of alcohol, absorbed into the tissues after being ingested, at the rate of about ten cubic centimeters an hour. About two per cent of alcohol is eliminated from the body unchanged. This, however, may vary from one to ten per cent. The remainder is oxidized by the body. Deep breathing, muscular activity and other forms of energy expenditure will speed up the rate of elimination. Thus a healthy man of 150 pounds will dispose of about a pint of proof spirits in twenty-four hours; that is, the amount of pure alcohol in a quart of whisky. This would be approximately the equivalent of about five quarts of five per cent beer.

Let us look further. Alcohol after being ingested is absorbed very quickly and permeates the entire body. About one-fifth is absorbed directly by the stomach. The most of the remaining part, or about 98 per cent, is absorbed by the small intestines. The effects begin after the first few

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minutes and reach a maximum in from two to two and one-half hours. Many tissues of the body receive more than their share of alcohol absorbed. While the saturation point of the body is five grams per kilogram of body weight, the brain will show an unduly large proportion of alcohol. This probably means that the effects on mental activity are likely to appear before physical effects. A narcotic tends to affect the centers of highest metabolic rate first.

What affects the rate of absorption?

There are many angles to the alcohol problem in relation to drunken driving. Some of the most important questions may be given as follows:

1. What was the concentration of the drink? Hard liquors will be absorbed much more rapidly than the light varieties.

2. What has the person eaten before or at the time he drank? Any kind of liquid or food will reduce the absorption rate but oily foods and fats will greatly retard the absorption rate. Milk is one of the best foods for slowing up absorption.

3. Over how long a time were the drinks spread? This has a great deal to do with absorption rate. The higher the rate the more rapid the absorption. Perhaps merely a matter of concentration?

4. Is the person an habitual drinker? This is very important. The effects of alcohol may vary widely in different instances for reasons shown in the following table. Thus it will be seen that the absorption rate is about twice as rapid for the neophyte and that the effect lasts nearly twice as long. The concentration in the blood of the latter, a close correlate of symptoms of drunkenness, after three hours is three times that of the habitual drinker.

5. Physical condition and other factors no doubt influence the effect of alcohol on the human body.

TABLE I

Milligrams Alcohol in 100 Cubic Centimeters of Blood

Hours After Drinking	Habitual Drinker	Moderate Drinker	Neophyte
One-half	50	64	97
One	50	102	122
Two	48	120	134
Three	44	118	132
Four	32	109	128
Five	18	92	126
Six	10	72	106
Seven	2	48	80
Eight	Not Noticeable	30	55
Nine	Not Noticeable	20	44
Ten	Not Noticeable	13	34
Eleven	Not Noticeable	8	22

What determines the effect of alcohol on behavior?

The above facts answer many of our questions as to the physiologic progress of alcoholic absorption. They do not go to the root of the problem and tell us the effects of say .010 per cent of alcohol in the blood. We want to know what types of behavior are most important in driving an automobile. Only the high spots can be covered in this brief account. Our studies of normal drivers have shown that a safe driver must possess the following basic qualifications. He must be able to meet new situations instantaneously and accurately. This of course is a general statement. More specifically he needs all the speed of movement and activity he has; all the strength he has; all the observational and interpretive powers he has; a quick shifting and wide margin of attention; good vision; a recognition of, and tendency to keep out of danger; a considerate attitude toward other drivers and pedestrians, a humane attitude; and finally a cautious attitude toward any semblance of risk or danger and emotional control. He must have endurance to maintain these characteristics during a long period of driving. This requires, good health, proper food, plenty of sleep, and freedom from narcotic and other depressant drugs.

What effects does alcohol have on these characteristics?

There is much experimental information available and we need not review it all here. In a very general way we may say that alcohol deadens the mental activity and slows up the general powers of observation. It tends to weaken the individual in the secondary stage as a depressant, and slow up his physical activity. It tends to make him oblivious to many important features of his environment, one reason for drinking, by narrowing the scope of attention and by increasing the time for the shift of attention from one thing to another. So far as we know it has little effect on visual acuity, as such, excepting in extreme cases when diplopia or double vision occurs. In addition, alcohol is well known to result in lack of caution and realization of danger, a lack of consideration of other people, and in certain cases a decided lack of emo-

tional control. Thus our pedestrian alcohol accident problem is on the increase—an utter disregard for danger. The driver must have endurance, and drinking not only decreases strength, *per se,* but invites late hours and revelry which will no doubt produce secondary ill effects. As a depressant, it is likely to lead to bad attitudes in general. We of course have not touched upon the problem of alcoholic psychoses. Here is another field that is inviting to those who are interested in chronic alcoholism of the habitual inebriate. It is somewhat out of the realm of our discussion.

How can the problem be solved?

To determine the effect alcohol has on driving we must study the responses involved in driving. Facts must be established to ascertain what persons are mostly likely to be affected by alcoholic liquors and under what conditions they are most affected. An enforcement officer will eventually have equipment to determine the driver's level of performance without alcohol after which he will measure the amount of alcohol in the blood, breath, or saliva; and finally by formula, which will be evolved, he may be able to point out to the driver the best way of safeguarding himself and others. It is well established that alcohol, in sufficient amounts, will influence behavior. The point at which alcohol becomes effective has always been slightful doubtful. Carlson and others[1] in 1934 found that 30 to 46 milligrams per 100 cubic centimeters produced no signs of intoxication. At 60 milligrams per 100 cubic centimeters they found some unsteadiness and impaired motor functions. There is some evidence that alcohol affects the judgment before the rest of the tissues. This problem has been investigated to some extent and the results apparently indicate early effects on judgment. The present experiment was formulated with the idea of determining the effects of small quantities of alcohol.

THE METHOD AND PROCEDURE

The method used in the present experiments was that of giving the subjects practice in advance, on laboratory apparatus developed by the National Research Council for evaluating driving performance. A description of the equipment was made by Lauer[11]. It suffices to say that the equipment has been used in twelve states during standardization tests and the superior records are made by test drivers and the highly proficient performers. On the other hand, beginners and inefficient drivers rarely make even an average score. A previous study of nine drivers showed similar general results. Thus, it had been established that the functions could be measured and that the tests were more or less valid.

The subjects used were as follows: first a physician, non-drinker, weight 160, age 34; second an engineer, non-drinker, weight 160, age 30; third a war veteran, drinks some and has been arrested for drinking, weight 165, age 46; and

TABLE II

Normal Performance After Practice. Tests made immediately before the driving performance were considered 100 per cent.

Subject	Efficiency	Mgs. alcohol per 100 c.c. blood
First Trial — 2.5 ozs. alcohol ingested.		
F	— 6.9	45.0
G	— 35.5	33.0
*L	+ 1.2	22.0
R	— 13.5	51.0
Mean	— 9.1	37.8
Second Trial — 2.5 ozs. alcohol ingested.		
F	— 41.9	65.0
G	— 72.8	78.0
L	+ 2.7	58.0
R	—140.1	67.0
Mean	— 63.1	67.0
Third Trial — 2.5 ozs. alcohol ingested.		
F	— 71.9	125.0
G	—103.0	111.0
L	+ 0.44	74.0
Mean	— 87.1	118.0

*L is quite a heavy drinker.

TABLE III

Comparison of Means of Performance for Various Functions Measured. (Before and afterward. Average of 94 milligrams per 100 cubic centimeters of blood.)

Mean of All Subjects			Per cent loss or gain
	Before	After	
Field of vision	190.50	184.20	— 3.3
Glare tolerance	59.00	47.50	—19.4
Distance judgment	34.90	41.20	—18.6
Reaction time	16.80	19.95	—18.8
Tracing	25.10	29.20	—16.4
Aiming	18.70	31.20	—66.8
Grip or strength	55.50	52.00	— 6.5
Activity (Tapping)	77.10	62.60	—18.8
Concentration Test	243.00	378.00	—13.3
Contacts	78.0	69.20	—11.4
Errors	0.57	0.75	—31.5
Time	374.00	345.00	— 7.7
Mean Loss			—19.4

Average loss in sensory group, 13.8 per cent.
Average loss in motor group, 23.1 per cent.
Average loss in judgment, 24.6 per cent.

fourth a physician, non-drinker, weight 185, age 31. Three subjects were practiced twice in advance and one was given one practice. There is reason to believe that a plateau had not been reached and that further improvement offset, to some extent, the effects of alcohol.

The experiment began at 7:00 in the evening when all subjects were given a complete set of tests to be used as a standard of comparison. This, in every case, is used as 100 per cent. Two and one-half ounces of alcohol in the form of whisky, diluted to about 200 cubic centimeters were given. After thirty minutes the blood tests were taken and the subjects given five key tests which show the effects of alcohol on driving performance. The subjects were given another two and one-half ounces, allowed to rest for thirty minutes and then retested. Dosages of two and one-half ounces of 90 per cent proof whisky were given three of the subjects at intervals of about one hour. The fourth subject did not receive the final dose as the supply of spirits was depleted.

RESULTS

It may be well first to investigate the conditions obtained. Harger[6] has established the danger zone as ranging from 50 to 150 milligrams per 100 cubic centimeters of blood. His terminology is slightly different, but the range is shown here. The condition of our subjects is shown in Table II. It will be seen that the amounts absorbed range from 22 milligrams to 125 milligrams per 100 cubic centimeters. The corresponding losses are also shown. A correlation of .58+ was obtained between the loss in performance and the amount of alcohol in the blood.

SUMMARY AND CONCLUSIONS

Four subjects, three non-drinkers and one drinker, were given two and one-half ounces of alcohol and tested for effects after blood samples were taken. The results must be considered in the light of the few subjects used and the limitations of the experimental conditions described. In general, it may be said:

A. That a noticeable effect on behavior occurs somewhere between 35 milligrams and 65 milligrams of alcohol per 100 cubic centimeters of blood.

B. That the greatest loss in efficiency is found in the abilities relating to judgment. These averaged about 25 per cent. Motor performance followed with about 23 per cent loss, while sensory capacities showed only 14 per cent loss.

C. That the direct effects of functions relating to driving seem to be:

1. Heightened variability and inconsistency in performance.
2. Decreased tolerance to glare.
3. Increased reaction time.
4. Poorer observation.
5. Tendency to speed up and be less cautious.

D. That the finer coordinations are eliminated first.

E. That in general, the effects of alcohol are variable with individuals, but small amounts are potentially dangerous. Accidents taking place in which the concentration is not over 50 milligrams per 100 cubic centimeters of blood can easily be accounted for by the effects produced on behavior. The conclusions offered need to be verified further by many cases at different ages.

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DETERMINATION OF ALCOHOL IN BLOOD AND URINE*

Harold W. Morgan, M.D., Mason City

You have heard this afternoon a very excellent discussion of the legal aspects of the tests for alcoholic intoxication by Judge Garfield. You have also heard the psychologic aspects of the case discussed by Professor Lauer of Ames. It is my purpose to give you some insight into the type of tests which may be used, the physiology of alcohol and alcoholic intoxication, and the practical application of the test in every day use.

The methods of analysis are many. Nickloux

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first developed the test in Europe, and many modifications of his work have appeared since that time. Practically all tests for alcohol in body fluids are based on the reaction of potassium dichromate in acid solution with alcohol. This gives rise to a color change which may be determined by comparison with standards previously prepared, such as the Heise method which I have used most extensively. It has the advantage of being specific for alcohol, the distillation with picric and tartaric acid holding back any other substances which might give a positive test. In other tests, notably the Weidmark and its many modifications, a standard solution of potassium dichromate is used. The alcohol, either by distillation or areation, is allowed to react with the dichromate and the excess titrated with ferris sulfate to determine the alcohol content. Cravet has modified this method by the use of a dessicating flask with a small glass spoon attached to a glass stopper. One-tenth to two-tenths of a cubic centimeter of blood or urine are placed in this flask over concentrated sulphuric acid and all volatile reducing substances are removed in this fashion. The excess dichromate solution is back titrated with ferris sulfate solution, methyl orange being used as an indicator. The amount of alcohol in expired air bears a constant relationship to the amount of alcohol in the blood if certain precautions are taken. The air should be taken at least ten minutes after the alcohol is taken by mouth. If the alcohol content is correlated with the carbon dioxide content of the expired air, to be sure that alveolar air is used in the test, then the breath test is also accurate.

The disadvantage of most of these tests is that they are not absolutely specific for alcohol. Other volatile reducing substances, notably acetone, may be present in some of them. This is only important as a point to use in confusing the jury, since a four plus acetone could not account for more than thirty milligrams of alcohol in any case. In the average legal case, even if the total amount of alcohol found was reduced by thirty, the alcohol content would be well above the intoxication level.

Alcohol taken into the body can be detected in the urine within three minutes, so a very rapid absorption of the drug takes place from the intestinal tract. This absorption rate will vary, depending upon the concentration of the alcohol taken, the total amount taken and the presence or absence of food in the stomach. The rate of elimination is practically constant, from twelve to twenty milligrams per hour. Therefore, the amount of alcohol found in the blood will depend upon the interplay between the factors of absorption, food content, concentration and rate of elimination. It must be remembered that in this test we test for absorbed alcohol and not imbibed alcohol. Shortly after alcohol reaches the blood stream, usually in from thirty minutes to one hour and one-half, an equilibrium is set up so that all the tissues of the body contain alcohol in amounts proportional to their water content. By the use of appropriate formulas, the total amount of alcohol absorbed in the body can be calculated from the blood or urine content.

The relationship of intoxicated drivers to motor accidents varies considerably, depending upon whether clinical or scientific tests are used to determine the intoxication. Where actual chemical tests are used, it is found that 50 to 60 per cent of accidents involve drinking drivers. In Ohio, Gerber examined 110 fatal cases of drivers and pedestrians, excluding children under fifteen years of age, and found that 58.6 per cent had been drinking. In most reports where accurate analysis has been made, 50 to 60 per cent of fatal and personal injury accidents have shown alcohol to be present. This figure contrasted with the ordinarily given figure of 17 to 25 per cent shows how crude our clinical tests for alcohol really are.

The National Safety Council reports an interesting statistical survey regarding personal injury accidents. In this series, using one's chance of having a personal injury accident without alcohol as the unit one, it was found that the ratio was three to one if up to 50 milligrams of alcohol are present; five to one if 50 to 110 milligrams are present; and fifty-five to one if more than 150 milligrams are present. In the bill which was presented to the legislature, but which has not been acted upon, an alcohol level below 70 milligrams is considered evidence that an individual is not intoxicated; from 70 to 150 milligrams indicates confirmatory evidence of intoxication; and above 150 milligrams constitutes prima facia evidence of intoxication.

In practical experience the test is extremely valuable. In a series of over 200 cases we see the alcohol concentrations grouped as follows. The average alcohol content of the blood of these drivers was 229 milligrams; the average amount in the urine was 269 milligrams. This means that the average person when apprehended in this group had between twelve and fifteen ounces of whisky, or its equivalent, absorbed at the time of his arrest. Judge Garfield has already explained the legal acceptance of such tests. In the 200 cases, there have been eight trials. This has meant a considerable saving for the cause of law enforcement, both in time and money. All but four of the individuals so far disposed of have either been convicted or plead guilty, representing a 98 per cent successful criminal use of the test.

In conclusion, scientific tests for intoxication are sound from a chemical and physiologic basis. In practical experience the tests secure a very high percentage of convictions. I believe, therefore, that scientific tests for intoxication provide the most accurate basis for a diagnosis of intoxication, both for medical and legal purposes.

HUMAN EQUINE ENCEPHALO-MYELITIS

R. N. Larimer, M.D., and E. G. Wiesser, M.D.
Sioux City

During August and September of 1938 sixteen cases presenting features of meningitis, but with unusual spinal fluid findings, were seen in St. Joseph's Hospital. Five similar cases were seen during the same months in 1937 as well as occasional cases in other hospitals. An analysis of the sixteen cases and a discussion of the nature of the syndrome are the basis of this report.

Of the sixteen cases, ten were males and six were females. Of the ten males, seven were over forty years of age and six were farmers. In eleven cases, the condition was characterized by a sudden onset with headache and fever. The remaining patients had indefinite complaints of headache or fatigue for as long as seven days before calling their physician. Headache, stiff neck, and a positive Kernig's sign were relatively constant, and usually pathologic reflexes were transient. Spinal fluid changes included an increase in the cell counts, especially in the lymphocyte series, normal or increased sugar content, and the absence of organisms in smears and cultures.

The course characteristically was short; the fever remaining high for about five days. No relation between severity of symptoms, physical signs, or spinal fluid changes, and the mortality rate was noted. Temperatures in some cases reached 105 degrees, or in fatal cases may have remained at 102 degrees until death became imminent. Of the four fatalities all died with high temperatures. Cells in the spinal fluid were no more numerous in fatal cases than in those where the patients recovered. The twelve patients who recovered showed no sequelae at the time of dismissal, although the spinal fluid findings may not have been normal at the last puncture.

Table I is an analysis of symptoms as they appeared in various patients. It is to be noted that there is no symptom which is characteristic of this condition and that any and all of the symptoms are those seen in various meningeal affections.

TABLE I
Symptoms of Sixteen Reported Cases.

Headache	14
Stiff neck	8
Vomiting	8
Insomnia	6
Restlessness	6
Muscle pains	6
Nausea	6
Photophobia	5
Delirium	4
Dizziness	4
Drowsiness	4
Chills	3
Impaired hearing	3
Mental confusion	3
Anorexia	3
Depression	2
Ringing in ears	2
Convulsions	2
Mumbling speech	2
Apprehension	2

Sore throat, pain in abdomen, numbness, inability to swallow, earache and diarrhea occurred once.

Table II outlines the various signs seen in this group of cases. It is to be noted that many of the signs are those not alone of meningeal but rather brain irritation. Likewise there is evidence of more than simple cortical irritation; levels as far caudal as the optic thalamus were affected.

TABLE II
Signs of Sixteen Reported Cases

Fever	15
Neck rigidity	13
Positive Kernig's sign	10
Patellar reflex diminished or absent	7
Tremor	6
Achilles tendon reflex diminished or absent	5
Nystagmus	4
Constricted pupil	4
Muscular rigidity	3
Dilated pupil	3
Positive Babinski's sign	3
Ankle Clonus	2
Positive Brudzinski's sign	3
Facial weakness	2
Pharynx inflamed	2
Irregular respirations	2

Other signs noted were:
Eyes deviated to right, eyes deviated upward, sluggish reaction to light, deviation of tongue, muscular twitching, hyperactive patellar reflex, stiffness in lower jaws, masked facies, urinary incontinence, hallucinations, laughing jag.

The spinal fluid was under moderately increased pressure. No manometer records were kept. The fluid in most instances was sparkling clear and did not in any case form a fibrin net on standing. Several patients showed bloody fluid repeatedly. Cells varied from normal in one instance to 1400. The average of all cases was 270. In every instance the lymphocytes were not less than 65 per cent of the total cells, and usually were from 80 to 90 per cent of the total. A trace of globulin was found in 50 per cent of the cases. Sugar determinations on various samples, by the Folin Wu method, gave an average of 104.5 milligrams. Wassermann reactions on blood and spinal fluid were uniformly negative. No organisms were found on stained centrifuged smears, nor were there any growths on cultures. Animal inoculation was not done.

Of the sixteen cases, complete recovery occurred in twelve patients; four died, and two of these were autopsied. One patient of the 1937 series died and the brain was examined. Dr. A.

C. Starry summarizes his examination of these brains as follows:

"Autopsy studies of the brain showed it to be large, wet and pinkish in color. Numerous patches of hemorrhage were seen distributed over the convulutions. The leptomeninges were peppered with small bright red hemorrhages. Lesions within the brain were inconspicuous to the naked eye. Microscopically there were evidences of brain softening with pynknosis and chromatolysis of ganglion cells and vacuolation of protoplasm in some. The white substance seemed especially involved with perivascular lymphocytic infiltrations and minute hemorrhages. The pia and arachnoid showed marked engorgement of vessels and similar lymphocytic infiltrations."

A review of the histories of these cases reveals their close resemblance to epidemic encephalitis, human equine encephalomyelitis, benign lymphocytic meningitis, choriomeningitis, polioencephalitis and other conditions. In each group differences have been said to exist in type of onset, exposure, seasonal incidence, age incidence, severity, sequelae and mortality rate; variations such as have been noted may be taken as being features of the disease. Abramson[1] reviewed the literature in 1934 and emphasized the mild course of acute lymphocytic meningitis. Textbooks present similar statements. Lymphocytic choriomeningitis and acute lymphocytic meningitis are described by Cecil and Meakins as being benign and non-fatal, and Christian says, "Recovery without complications or sequelae is almost certain." Twenty-five per cent of our cases ran fulminant courses and died; three autopsies showed a lymphocytic meningoencephalitis. This seems to suggest that this group represents a different type of disease.

The pathology of lymphocytic meningitis as described by Viets and Warren[2] and that of epidemic encephalitis (St. Louis type) appear to show differences only in degree. The impression is given that these conditions though related, have different etiologic agents. Neal, Armstrong and others[3] have demonstrated viruses in spinal fluids and tissues of individuals who were variously diagnosed as above. By neutralization and mouse protection tests, in rabbits, monkeys, mice and guinea pigs, a fast growing family of ultra microscopic substances has been differentiated. Facilities for such investigations were not available to us and we failed to determine the etiologic agent in our cases.

Epidemic equine encephalitis, a virus disease, is generally thought of by veterinarians as being non-infective to man, but in the past two years there have been several reports expressing contrary opinions.[4] Feemster[5] reported thirty-seven cases with seven fatalities, and he feels that certain strains of mosquitoes transmit the disease. The United States Public Health Service investigated an epidemic of equine encephalitis affecting humans in Minot, South Dakota, in 1938. Field and domestic mice and pheasants have been suggested as further sources of infection. In no report, nor in our series, has infection in more than one member of a family been noted. Inasmuch as the area from which the cases of this report came, has had an epidemic of "equine encephalitis" and six of the ten males reported had had definite exposure to horses so affected, it has seemed probable that these cases were caused by a similar infective agent. We have no proof for this impression.

Treatment of these patients consisted chiefly of repeated spinal punctures and other means of reducing intracranial pressure. Fifty per cent glucose or sucrose given intravenously in amounts of fifty to one hundred cubic centimeters stood next to spinal puncture in value. Sulfanilamide was given an intensive trial but did not seem to alter the course of the disease. Morphine in large doses provided the best means of relief of headache and in some instances as much as one-fourth of a grain, repeated every two hours, was necessary. Moderately large doses of magnesium sulphate by mouth or rectum seemed to have a favorable effect. Autohemotherapy in one case seemed valueless. Convalescent serum was not tried but would deserve trial if one were sure of the diagnosis.

CONCLUSIONS

A brief review is given of sixteen cases of an acute, presumably virus, infection having an affinity for the central nervous system. This febrile illness is accompanied by a wide variety of symptoms and signs referable to the meninges in benign cases and to the brain in severe or fatal cases. The cerebrospinal fluid is characterized by an increased cell count in which lymphocytes are definitely predominant. The sugar content is frequently raised and globulin is usually present. The fluid is aseptic. The course is relatively short and the disease is self limited. With recovery, there are no sequelae, but four of sixteen patients died. It is our clinical impression that the disease is related to, or is the same as, equine encephalomyelitis.

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TREATMENT OF PRECANCEROUS LESIONS OF THE UTERINE CERVIX*

J. Norman Bickert, M.D., Cedar Rapids

We are members of a profession whose aim and duty it is to delay our rendevous with the grim reaper. That we are creditably performing our duty is attested by the fact that life expectancy today is twenty years more than it was at the turn of the century. This great saving in lives has been brought about by our systematic and concerted action against particular forces of destruction, as well as the general raising of hygienic and sanitary conceptions. A number of years ago we organized for a war on tuberculosis. We are now uniting our forces against cancer. This insidious disease captured second place as a cause of death in 1921, and has been increasing alarmingly ever since. Specifically, the object of our present concerted action is the early diagnosis and elimination of precancerous lesions.

In 1936 the word cancer graced more than 140,000 death certificates in the United States, an average of more than 383 deaths a day. There are two deaths from cancer today for each death from all forms of tuberculosis which we still call the white plague. Twelve per cent of all deaths in Linn County last year were due to cancer. One out of every seven deaths in women is due to cancer. One-third of these cancers are in the cervix or uterus.

I have nothing new to offer as a treatment for carcinoma, nor do I care to dwell upon the etiologic factors of its development. I merely wish to point out that most students agree its initial development awaits upon the excitation of a local irritant. Cervicitis and endocervicitis, if left untreated, are very often forerunners to cancer of the cervix. Ewing estimates that 75 per cent of cervical cancers are preceded by chronic endocervicitis. Since cancer of the cervix or uterus causes one-third of all the cancer deaths in women, this paper will be confined to a method of treating cervicitis and endocervicitis.

CAUSES OF INFLAMMATION OF THE CERVIX

A. Specific; gonorrheal or syphilitic.
B. Nonspecific
   1. Lacerations
      a. Postpartum
      b. Postabortal
      c. Postoperative
   2. Erosions
   3. Eversions
C. Atrophic cervicitis
D. Local irritation from foreign bodies, such as pessaries.

One of the most common causes of cervicitis and endocervicitis is laceration of the cervix following delivery. Therefore, I wish to emphasize the importance of a vaginal examination not only six weeks after delivery but also six months later. Any tears which have not healed properly by this time will not heal later and treatment should be instituted without further delay.

In cervicitis, the crevix is swollen, at times bright red in color and bathed in a profuse discharge. If there is no infection this discharge may be clear and gelatinous in character; if infection is present the discharge may be yellowish and mucopurulent. Many variations in the appearance of the cervix may occur. If lacerations are present, either unilateral or bilateral, the lips may be everted, exposing the mucous membrane lining of the cervical canal. The formation of Nabothian cysts is frequently accompanied by hypertrophy so that the cervical lips become enlarged and their density is increased. These Nabothian cysts or pearl-like bodies may be seen imbedded in the cervix; they have a slightly bluish translucent appearance and may feel like imbedded shot. Erosions may be present due to the exposed surface of the cervix coming in contact with the vaginal mucosa, and the irritation of the discharge from the cervical canal.

TREATMENT

The recognized forms of treatment are: tampons; cauterization; conization, surgical and electrosurgical; and coagulation. My method of choice is coagulation because it presents the following advantages:

1. No general anesthesia is required.
2. All work can be confined to office practice; no hospitalization is needed.
3. It offers selective control of the extent of tissue destruction.
4. It causes no scar tissue formation or stenosis.
5. There is little chance for hemorrhage; no after treatment is necessary.
6. There is a marked increase in systemic tone and general well being of the patient, due to the autogenous vaccine reaction following coagulation. (The immediate reaction of the

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patient, however, is somewhat toxic in character.)

7. Results are positive.
8. Healing following coagulation results in a smooth, pliable, normal epithelium.

Several years ago, Mayo[1] pointed out that the cervix, especially where cystic degeneration was present, could readily be a focus of infection, and as such was responsible for "rheumatic involvements in women, and in cases of ocular disease such as chronic recurring iritis and phlyctenular keratitis." Silvers[2] has also shown that the coagulation of a focus of infection sets up a reaction in the system that "simulates response to the autogenous vaccine inoculation of a virulent organism. It is apparently specific in nature." The phenomenon of an autogenous vaccine reaction following coagulation is a very valuable adjunct in clearing up the secondary lesions referred to by Mayo, and also in lending tone and a gratified sense of well being in the patient.

TECHNIC

For coagulation, I use a bipolar electrode, a high frequency machine, and a foot switch. The electrode has a selection of tips to fit the areas involved. For coagulating the canal proper, there is a small cylindrical tip with two parallel wires partly exposed on one flat side. This tip is inserted into the canal only as far as the diseased area extends. I lay the flat side of the tip against the canal wall wherever I wish to coagulate, and thus affect a strip of tissue approximately four millimeters wide, one millimeter deep, and running the length of the diseased area. Two such strips are made on the side wall of the canal, usually at the eight o'clock and ten o'clock positions. At the next treatment, ten days to two weeks later, two strips are coagulated at the two and four o'clock positions. This is usually enough completely to encompass the canal. If there is any infected area left, it can be taken care of at a third treatment. Occasionally it is necessary to go around the clock twice, but very rarely.

The coagulated area will slough off within a few days, exposing a smooth, pliable, normal epithelium. To prevent the occurrence of a cicatricial stenosis, the canal should be treated piece meal with an untreated area always left opposite a treated area. Anesthesia is indicated only when it is necessary to dilate the canal before inserting the electrode. It is best to time treatments so that no work is done within ten days of menstruation. Pregnancy is a contraindication.

For the cysts there is a tip with two projecting points which I plunge into the cysts while I coagulate. For the eroded area there is a tip with rounded, retreating points which I draw across the area, coagulating a strip as it goes. If the eroded area is extensive only the edges are coagulated at the first treatment, and the center is left for the next treatment. It is important not to overcoagulate at any one treatment, for it is possible to stir up too great a reaction. The more virile the infection the less one should attempt at a sitting. With the coagulative process, one can definitely destroy all pathologic tissue about the cervix and resurface it with smooth, pliable, scarfree epithelium, which is no longer an open invitation to carcinoma.

SUMMARY

1. Vaginal examination six months after delivery is recommended as routine practice.

2. One-third of all cancer deaths in women result from cancer of the cervix or uterus.

3. Cervicitis and endocervicitis, if left untreated, are forerunners of cancer.

4. Coagulative treatment is my method of choice in clearing up cervicitis and endocervicitis.

1127 Merchants National Bank Building.

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CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

ARTERIAL HYPERTENSION*

HORACE M. KORNS, M.D., Iowa City

Arterial hypertension presents one of our major problems, for, directly or indirectly, it causes 20 to 25 per cent of all deaths in persons over fifty years of age. Insofar as etiology is concerned, the hereditary factor is perhaps one of the most important, but the real pathogenesis of the disease is still unknown.

IS ESSENTIAL HYPERTENSION OF RENAL OR NON-RENAL ORIGIN?

The controversy over this question is very old. The principal arguments which have been advanced against its being of renal origin are first, that the blood pressure reaches and maintains a high level before renal function is demonstrably

*From the Department of Internal Medicine, State University of Iowa, College of Medicine.

impaired; second, that in a large percentage of cases renal insufficiency never becomes manifest; and third, that in some cases anatomic signs of renal disease have not been demonstrated. In respect to the third argument, however, the possibility of sclerosis and partial obstruction of the main renal arteries has not always been excluded. There have been a great many partially successful experimental attempts to show that the kidney may play a primary rôle in the development of hypertension, but no conclusive proof was adduced until Goldblatt and his associates[1] demonstrated that renal ischemia uniformly leads to hypertension in dogs and monkeys. Goldblatt's method of producing renal ischemia by partially clamping the main renal arteries is well known.

That the ischemic kidneys are in some way directly responsible for the development of the experimental hypertension is shown by the following experiments. If the main renal artery of one kidney is constricted, producing persistent hypertension, and the ischemic kidney is later removed, the blood pressure falls promptly to normal. If, instead of nephrectomy, the clamp on the ischemic kidney is released or removed, the blood pressure returns to normal. If experimental hypertension is produced by clamping both main renal arteries, and both clamps are later released, the blood pressure falls immediately to normal. If one kidney is transplanted to the neck or inguinal region, and the other kidney is removed, reduction of the arterial blood supply to the transplanted kidney results in the development of hypertension. Bilateral nephrectomy does not cause persistent hypertension. A nervous reflex from the ischemic kidney is not the cause of the experimental hypertension, for the latter is neither prevented nor reduced by denervation of the renal pedicle, section of the splanchnic nerves and excision of the lower four thoracic sympathetic ganglia, section of the anterior nerve roots from the sixth dorsal to the second lumbar, inclusive, excision of the entire sympathetic nervous system in the thorax and abdomen, including denervation of the heart, or even by pithing the animal. Further proof is afforded by the transplantation experiment already mentioned.

The mechanism must therefore be humoral, but attempts to elucidate it have not yet been entirely successful. Since occlusion of both main renal arteries does not eliminate all circulation to the dog's kidneys, a chemical substance might still be washed from the kidney into the general circulation. That this is most probably the case is shown by the fact that hypertension fails to develop when both main renal veins are occluded at the same time the main renal arteries are constricted or occluded. Furthermore, if an ischemic kidney from one animal is transplanted to the neck of a nephrectomized animal, the blood pressure of the latter rises almost immediately after the partial circulation through the ischemic kidney is restored, whereas the transplantation of a normal kidney has no effect on the blood pressure.

Attempts to demonstrate the presence of a pressor substance in the blood of animals with experimental hypertension and in that of human beings with essential hypertension have been inconclusive, but it is known that bilateral adrenalectomy without supportive or substitution therapy prevents the development of hypertension due to renal ischemia and causes previously produced hypertension to disappear. The result is the same even when salt is given, but when, in addition to salt, cortical extract is administered, some of the animals develop hypertension despite the absence of both adrenal glands. That it is the cortex and not the medulla of the adrenals which is important in this connection was shown by experiments in which one adrenal gland was completely removed, the medulla of the remaining adrenal gland destroyed, and only enough of the cortex left to sustain life; in such animals the blood pressure rose when the main renal arteries were constricted. It is also known that there is no increase in the secretion of epinephrine in this kind of experimental hypertension.

What the practical application of this interesting experimental work will be remains to be seen, but there is no doubt that it constitutes strong presumptive evidence that human essential hypertension is of renal origin.

Rôle of the Central Nervous System

In essential hypertension stimuli from the central nervous system may be primarily or partially instrumental in elevating the blood pressure above the level determined by the supposed renal mechanism. It is probably the effect on this factor which accounts for any fall of blood pressure brought about by the medical treatment of hypertension.

Clinical Manifestations

Morning headache, fatigability, irritability, insomnia, tinnitus, vertigo, palpitation, and shortness of breath on exertion are well-known symptoms of hypertension. Attacks of "dead finger" and so-called "cerebral asthma;" acute increases in the height of the blood pressure, characterized by terrible dyspnea with or without anginal pain; transitory pareses and visual disturbances; and overreaction to the cold-pressor test of Hines and Brown,[2] are all manifestations of the angiospasm

to which patients with essential hypertension are notoriously subject. The incidence of angina of effort, coronary occlusion, and paroxysmal nocturnal cardiac dyspnea is much higher in patients who have hypertension in addition to their coronary arteriosclerosis than in those with uncomplicated coronary sclerosis. The cause of death is usually congestive heart failure, apoplexy, or coronary occlusion, although in about ten per cent of the cases uremia develops as a terminal event.

MEDICAL TREATMENT

The most important non-surgical measure is rest, including freedom from worry and emotional stress. Because of their sedative and depressor effects, the barbiturates are the most valuable drugs we have in the medical treatment of hypertension. The prolonged action of phenobarbital makes it the one of choice; the dose ordinarily used is one to two grains a day. Nitrites are practically useless except in emergencies, and the sulphocyanates are dangerous unless the dose is controlled by frequent determinations of the cyanate content of the blood. If the patient is obese, the caloric value of the diet should be low. If he is not, the only dietary restriction of any consequence is quantitative; it makes little difference what he eats, as long as he does not eat too much at any one time.

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THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

CARCINOMA OF THE ESOPHAGUS

ALBERT J. ENTRINGER, M.D., Dubuque

The present high mortality rate of esophageal cancer is associated with its late diagnosis. This is largely due to the fact that the early symptoms are usually so vague that they are disregarded by the patient and all too frequently by physicians. As in all other forms of malignancy, early detection and adequate treatment offer the only hope of a successful outcome in esophageal cancer. The case to be presented is a late one and is cited to emphasize the necessity for intensive clinical investigation of every patient with symptoms, however vague, referable to the esophagus.

CASE REPORT

The patient a white man, sixty years of age, was first seen August 16, 1938, when his chief complaint was "difficulty in swallowing solid food".

Family History: Negative.

Past History: The patient had always been well except for the diseases of childhood.

Habits: On questioning to determine possible etiologic factors the patient stated he always had been fond of hot foods and drinks and that up to about a year before admission he had been a heavy drinker of alcohol.



Fig. 1. X-ray showing an irregular filling defect with proximal dilatation of the esophagus characteristic of carcinoma.

Present Illness: For the past month the patient had noticed gradually increasing difficulty in swallowing solid foods. There had been no other symptoms.

Physical Examination: The examination was negative, but since the history was characteristic, an x-ray examination of the esophagus was requested. This report was as follows: "X-ray examination of the esophagus shows an irregular filling defect involving the lower fourth. The viscus is moderately dilated above the defect and the appearance is characteristic of carcinoma of the esophagus. (Fig. 1). The examination of the stomach and duodenum are negative. Conclu-

sion: Carcinoma of the lower fourth of the esophagus."

Subsequent Course: An esophagoscopic examination and surgery were refused and the patient was returned to his home for palliative treatment. He was placed on a diet of soft foods consisting of milk, gruels, strained foods including vegetables, cod liver oil and fruit juices. His condition remained unexpectedly good for about five months during which time he was free from pain and partook of his diet with relative relish. About a month before death he began to cough and raised



Fig. 2. Photograph of the esophagus and cardiac end of the stomach.

a blood tinged expectoration. He also complained of pain in the apex of the right lung. Numerous fine râles were heard in this area and it was considered likely that these were due to a metastatic lesion. After this time the difficulty in swallowing increased and the patient failed rapidly, dying six months after being first seen. At no time did the patient have any great pain.

Autopsy Abstract: The body, that of an emaciated white man, showed only a small left inguinal hernia externally. The esophagus was involved by the neoplasm throughout its entire length, and it had extended to the cardiac end of the stomach. (Fig. 2). The appearance suggested a series of surface implantations. In two areas the wall was markedly thinned and perforation seemed imminent. Microscopically the growth was a highly malignant squamous cell carcinoma. Extending from the wall of the esophagus to the apex of the right lung was a neoplastic mass four centimeters in diameter. A few pleural metastases were also found over the lowest lobe of the right lung. Other metastases were encountered in the left kidney and in the gastric omentum. The only other positive findings were bilateral bronchopneumonia with miliary abscesses, acute fibrinous pleurisy and arteriosclerosis.

Anatomic Diagnosis:

Primary:

1. Squamous cell carcinoma involving the entire esophagus; extension to the cardiac end of the stomach; metastases to the apex of the right lung, parietal and visceral pleura; diaphragm, gastric omentum, pancreas and left kidney.
2. Bilateral bronchopneumonia with miliary abscesses; acute fibrinous pleurisy.

Subsidiary: Arteriosclerosis; left inguinal hernia.

DISCUSSION

Malignancy of the esophagus is by no means an uncommon disease. According to Cutler[1] it ranks fifth in the incidence of all malignant tumors; eleven per cent in men and 1.3 per cent in women originating in the esophagus. This condition is dreaded for two main reasons; first, because of its relative insidiousness, it is usually diagnosed late; and second, because, up to the present, the treatment is very unsatisfactory.

Pathologically the predominant type is the squamous cell carcinoma (85 to 90 per cent). Adenocarcinoma is seen, but usually is the result of extension of a stomach growth to the cardia. Sarcoma is relatively infrequent. In common with most other types of malignancies, the parts of the esophagus subject to chronic irritation are the more common sites of origin. In the esophagus the three anatomic portions that are physiologically narrowed are the places where malignant tumors are most frequently found. This condition is seen most often between the ages of fifty and seventy years (70 per cent). It is rarely seen under forty years of age.

As yet little is proved about the etiology of carcinoma and sarcoma in any portion of the body, and this condition exists for carcinoma in the esophagus. Statistics, however, tend to show that in most people suffering from this condition chronic irritation plays a big part. Swallowing of irritating foods, spiced foods, tobacco, alcohol, regurgitation of food, fermentation and stagnation of food, regurgitation of acid contents of the

stomach, drinking hot fluids, eating hot foods, all have some influence. Because of the esophageal intolerance of the continued presence of anything, any obstructive disease or condition may possibly lead to malignancy. Since the esophagus is very susceptible to spasm, psychic factors resulting in spasm and stasis may predispose to cancer.

Symptoms: The early signs are often vague and poorly localized by the patient. Spasm often thought to be due to neurosis or hysteria is probably one of the earliest signs, but its significance is usually not realized by the patient. Another early sign may be intermittent difficulty in swallowing. Late signs are increasing difficulty in swallowing solid foods, then progressive inability to swallow fluids and finally frank obstruction. Pain is not prominent and when present usually denotes extension. However, some patients complain of discomfort in the upper sternal region or in the dorsal spine. Regurgitation of foul, blood-streaked material may also occur. Dyspnea due to compression or invasion of the trachea is rare. Very late signs indicating involvement of the recurrent laryngeal or phrenic nerves are hoarseness or an annoying hiccough, respectively. The expectoration of blood-streaked material indicates ulceration. Hemorrhage, mediastinal compression or perforation may complicate the condition.

Diagnosis: Fluoroscopic examination is made with an opaque medium (barium or bismuth salts) in gelatin blocks or in sausage skin, because an examination with the usual opaque media used in gastro-intestinal studies may be misleading. The essential findings are an irregular filling defect with a "punched out" appearance or an annular constriction. The lumen is narrowed at the growth and the proximal portion of the esophagus is dilated if there is partial or complete obstruction. Esophagoscopy enables direct examination when the character and extent of the growth may be determined. Biopsy should be done to determine the type and the grade of malignancy of the growth.

Treatment: The treatment of esophageal cancer is very unsatisfactory. Because of the advanced stage at which a diagnosis is made, the total removal of the growth is practically impossible. In early cases resection of the thoracic portion has been accomplished by the following methods: first, retropleural, through a posterior mediastinotomy; second, transpleural; third, esophagogastrotomy; and fourth, the "pull through" operation of Grey Turner[2]. Cervical and abdominal routes are utilized for growths in the upper and lower portions. At the present time when the majority of cases are seen late, palliative treatment is all that can be offered. Gastrostomy is indicated early; it rests the esophagus and insures adequate nourishment. This may retard the growth and certainly makes the patient more comfortable. Esophageal intubation may be advisable in some cases. Dilatation may be indicated when gastrostomy cannot be done. Blind bougienage is dangerous and may result in perforation and death if the wall of the esophagus is weakened. When necessary, bougienage through the esophagoscope, particularly if a previously swallowed string is used as a guide, is much safer. In the past, radium treatment has been unsatisfactory because of the extent of the growth when recognized. It is conceivable that cure might result if the lesions were detected very early. In general, radon seeds implanted in the lesion have given better results. At the present time deep x-ray therapy (Coutard technic) is being used more generally and with fair palliative results. It should be pointed out, however, that with either radium or x-ray therapy severe toxemia may result.

Diathermy has also been used in the treatment of cancer of the esophagus. The favorable results obtained in the treatment of malignant growths of the buccal cavity, in which diathermy has largely supplanted the knife, has stimulated attempts at treating esophageal growths by special electrodes used in conjunction with the esophagoscope. While this method is of too recent origin to evaluate fully its advantages it would seem logical to expect results comparable to those obtained in the treatment of cancer of the mouth, especially if it can be utilized early in the disease.

CONCLUSION

In reviewing the literature on esophageal cancers one is struck by the fact that the great majority of cases are diagnosed late. This indicates the need for lay education as to the significance of even the slightest difficulty in swallowing. When the medical profession has accomplished this desirable end, it has a second and equally important duty; that of making an early diagnosis. This demands a complete x-ray and esophagoscopic examination as soon as the patient presents himself, and no doctor should be satisfied until an exact diagnosis is made. Undoubtedly the prognosis which is now so extremely poor can be improved in the future by the intelligent cooperation of the patient and the medical profession.

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UNIVERSITY OF WISCONSIN MEDICAL SCHOOL INSTITUTE

Announcement has just been received of an Institute for the Consideration of the Blood and Blood-Forming Organs, which will be conducted by the University of Wisconsin Medical School, September 4 to 6, 1939, at the University in Madison. The program is to include papers and round table discussions by European and American workers in the field of hematology. In addition to the discussions, the following formal papers are to be presented: Anemias Due to Iron Deficiency, L. J. Witts, M.D., Oxford, England; The Porphyrins and Diseases of the Blood, Cecil J. Watson, M.D., Minneapolis; Aplastic Anemia, Cornelius P. Rhoads, M.D., New York; Some Etiologic Factors in Pernicious Anemia and Related Macrocytic Anemias, E. Meulengracht, M.D., Copenhagen, Denmark; The Coagulation of Blood, Harry Eagle, M.D., Baltimore; Anemias of Nutritional Deficiency, George R. Minot, M.D., Boston; The Nature of the Hemolytic Anemias, Russell L. Haden, M.D., Cleveland; Experimental Leukemia, Jacob Furth, M.D., New York; Monocytic Leukemia and Aleukocythemic Leukemia, Claude E. Forkner, M.D., New York; Hodgkin's Disease, Edward B. Krumbhaar, M.D., Philadelphia; The Erythroblastic Anemias, Louis K. Diamond, M.D., Boston; Marrow Cultures, Edwin E. Osgood, M.D., Portland; The Reticuloendothelial System, Charles A. Doan, M.D., Columbus; Infectious Mononucleosis, Prof. Hal Downey, Minneapolis; and Polycythemia, Paul Reznikoff, M.D., New York.

Physicians and others who are interested are cordially invited. A detailed program may be obtained by addressing Dr. Ovid O. Meyer, Chairman of the Program Committee, at the University of Wisconsin Medical School, Madison, Wisconsin.

MEDICAL EXHIBIT AT THE NEW YORK WORLD'S FAIR

In the Medicine and Public Health Building at the New York World's Fair, Lederle Laboratories are sponsoring scientific exhibits on allergy and pneumonia, each exhibit being controlled by a committee of eminent specialists on these diseases. All exhibits in the building are scientific in character, merely carrying on a small plaque the names of the sponsors.

The pneumonia exhibit, surfaced entirely of white laminated "beetle," occupies a booth twenty by thirty feet in a commanding position. It presents, pictorially, the best composite opinion of the medical profession on how a pneumonia case should be treated. The narrative is unfolded by means of a sequence of dioramas, pictures, and charts. The story begins with an "animation" of a man walking in the rain, and takes him through typing and serum therapy and the various progressive stages of a typical case of pneumonia to a final picture at the serum farm where his little daughter is pictured, saying, "Thanks, old horse, you saved my Daddy's life!" A postscript deals with sulfapyridine.

The second exhibit, on allergy, presents in changing dramatic sequences, three two minute dramas of allergy: "Tommy Todd's Autumn Colds", "Mrs. Tucker's Wheezes" and "Baby Bing's Eczema". By means of an animated question box and dioramas showing typical scenes in the doctor's office, a search for the offending allergic excitant in each of the three stories is conducted through information obtained by questions, scratch tests and an examination of the patient's family tree. An interesting part of the



Lederle Exhibit on Pneumonia

allergy exhibit is an illuminated transparency chart showing in full color, forty-eight of the most common allergic excitants. A separate series of smaller pictures invites the visitor to examine commonplace scenes for causes of allergy and then, by pressing buttons, to illuminate the concealed answers.

Both exhibits are addressed to intelligent laity, and are attracting close attention.

Physicians visiting the New York World's Fair are entitled to exclusive privileges in the Professional Club in the same building. Admission is obtained by simple identification as a doctor, without charge, and is available only to physicians and their guests. Provision is made here for consultation with exhibit sponsors on technical questions.

STATE DEPARTMENT OF HEALTH

Walter L. Bierring

VENEREAL DISEASE LEGISLATION EFFECTIVE IN IOWA JULY 4, 1939

Published herewith is the text of House File 57 and House File 58 as passed by the Forty-eighth Iowa General Assembly. These bills became effective July 4, 1939. Any inquiries regarding the interpretation of these two bills should be addressed to the Division of Venereal Disease Control, Iowa State Department of Health, Des Moines, Iowa.

HOUSE FILE NO. 57
AN ACT

To amend Chapter one hundred nine (109), Code, 1935, relating to venereal diseases, requiring licensed physicians or other authorized persons attending pregnant women to take a blood sample of each woman so attended within fourteen days of first examination, and, in certain instances of the husband and father, other children by the same mother, or person responsible for pregnancy, submitting such sample for standard serological tests for syphilis to the state bacteriological laboratory of the State University of Iowa at Iowa City or such other laboratories cooperating with and approved by the State Department of Health; and further amending said chapter by exempting certain persons from the operation of said law.

Be It Enacted by the General Assembly of the State of Iowa:

Section 1. Chapter one hundred nine (109), Code, 1935, is hereby amended by adding immediately after section twenty-two hundred eighty-one (2281), the following sections:

(1) Each physician attending a pregnant woman in this state during gestation, shall, in the case of each woman so attended, take or cause to be taken a sample of blood of such woman within fourteen days of the first examination, and submit such sample for standard serological tests for syphilis to the State Bacteriological Laboratory of the State University of Iowa at Iowa City or such other laboratories cooperating with and approved by the State Department of Health. Every other person permitted by law to attend upon pregnant women in the state but not permitted by law to take blood tests, shall cause a sample of the blood of such pregnant woman to be taken by a duly licensed physician and submitted for standard serological tests for syphilis to the State Bacteriological Laboratory of the State University of Iowa at Iowa City or such other laboratories cooperating with and approved by the State Department of Health. Such laboratory tests as are required by this act shall be made on request without charge by the State Department of Health. If such person reacts positively to such test, then the husband and father, other children by the same mother, or person responsible for pregnancy shall be subjected to same blood test as herein provided. The result of all laboratory tests shall be reported on standard forms prescribed by the commissioner of public health.

(2) In reporting every birth and stillbirth, physicians and others permitted to attend pregnancy cases and required to report births and stillbirths shall state on the birth certificate or stillbirth certificate, as the case may be, whether a blood test for syphilis has been made during such pregnancy upon a specimen of blood taken from the woman who bore the child for which a birth or stillbirth certificate is filed, and if made the date when such test was made, and if not made, the reason why such test was not made. In no event shall the birth certificate state the result of the test.

Section 2. Amend chapter one hundred nine (109), Code 1935, by adding to said chapter as section twenty-three hundred fifteen-i one (2315-i1) the following:

2315-i1. No provision of chapter one hundred nine (109), Code 1935, as it now appears or as the same may be amended, shall be construed to require or compel any person who is a member of a well recognized church or religious denomination, and whose religious convictions in accordance with the tenets or principles of his or her church or religious denomination are opposed to medical treatment for disease, to take or follow a course of medical treatment prescribed by law, or by a physician.

Section 3. In event that any phrase, clause, or section of this act be found to be unconstitutional for any reason such unconstitutionality shall not have the effect of invalidating those other portions of this act which may be found to be constitutional but those other portions which are found to be constitutional shall continue to remain and be in full force and effect.

Approved: May 17, 1939.

(Signed) GEORGE A. WILSON,
Governor.

This law becomes effective July 4, 1939.

HOUSE FILE NO. 58
A BILL FOR

AN ACT to amend sections twenty-two hundred eighty-five (2285), twenty-three hundred five (2305), and twenty-two hundred eighty-seven (2287), Code, 1935, relating to reports by the state boards of health of those persons infected with venereal diseases who have failed to report for treatment; and to amend chapter one hundred nine (109), Code, 1935, by exempting certain persons from the operation of said law; and to provide penalties for violations of the provisions of this act.

Be It Enacted by the General Assembly of the State of Iowa:

Section 1. Section twenty-two hundred eighty-five (2285), Code 1935, is hereby amended by adding thereto the following:

"It shall be the duty of the state department of health when such reports are received to report the

name of the infected person to the local board of health of the jurisdiction wherein he resides.

Sec. 2. Section twenty-three hundred five (2305), Code, 1935, is hereby amended by adding thereto the following: ", except as otherwise herein provided, and the alleged infected person shall have access to such records pertaining to himself without an order of court."

Sec. 3. Section twenty-two hundred eighty-seven (2287), Code, 1935, is hereby amended by striking from lines one (1) and two (2) the following words: "When it shall appear to the local board", and inserting in lieu thereof the following:

"When a local board of health has been officially notified by the state department of health, as provided in section twenty-two hundred eighty-five (2285) of the Code,".

Sec. 4. Any person who knowingly violates any of the provisions of this act shall be punished by a fine of not to exceed one hundred dollars ($100), or by imprisonment in the county jail not to exceed thirty (30) days.

Sec. 5. Amend chapter one hundred nine (109), Code, 1935, by adding to such chapter as section 2315-i1 the following:

No provision of chapter one hundred nine (109), Code, 1935, as it now is or as the same may be amended, shall be construed to require or compel any person who is a member of a well-recognized church or religious denomination, and whose religious convictions in accordance with the tenets or principles of his or her church or religious denomination are opposed to medical treatment for disease, to take or follow a course of medical treatment prescribed by law, or a physician, providing such person shall submit to and comply with all rules and regulations regarding quarantine, detention and confinement that may be prescribed by the local board of health.

Sec. 6. In event that any phrase, clause, or section of this act be found to be unconstitutional for any reason such unconstitutionality shall not have the effect of invalidating those other portions of this act which may be found to be constitutional but those other portions which are found to be constitutional shall continue to remain and be in full force and effect.

PNEUMONIA CONTROL COMMITTEE

Appointment of an Advisory Committee on Pneumonia Control was approved by the House of Delegates at the Eighty-eighth Annual Session of the Iowa State Medical Society. Fred M. Smith, M.D., Iowa City, professor of theory and practice of medicine, University of Iowa, has been named chairman of the committee. Members serving with the chairman are: Benjamin F. Wolverton, M.D., of Cedar Rapids; Herbert W. Rathe, M.D., of Waverly; Albert A. Schultz, M.D., of Fort Dodge; Dennis H. Kelly, M.D., of Des Moines, and Carl F. Jordan, M.D., of Des Moines.

ROCKY MOUNTAIN SPOTTED FEVER AS REPORTED IN JUNE

Eleven cases of Rocky Mountain spotted fever were reported to the State Department of Health in June (through the 29th). Cases reported thus far this year total sixteen, with two known fatalities. First cases were recently reported from the following seven counties: Appanoose, Clinton, Hamilton, Polk, Wayne, Webster and Wright; the remaining cases occurred in Adams, Jackson, Muscatine and Wapello counties.

Diagnosis in the reported cases is based on clinical findings and history of tick bite or exposure to ticks, confirmed in nearly all cases by positive Weil-Felix agglutination tests. Three of the patients were apparently benefited by convalescent spotted fever serum administered intravenously in amounts varying from 150 to 250 cubic centimeters. Additional information regarding cases as notified in June appears in the accompanying table.

INFORMATION REGARDING 11 CASES OF ROCKY MOUNTAIN SPOTTED FEVER REPORTED IN JUNE, 1939

Patient	Age	Sex	Occupation	History of tick exposure	Onset illness	Onset rash	Weil-Felix test	County	Urban or Rural	Attending Physician
1. R. D.	49	F	Housewife	?	5–9	5–13	1–320	Webster	Urban	O. N. Glesne, M. D. Fort Dodge
2. M. M.*	45	M	Railroad employee	Pos	5–12	?	1–40	Clinton	Urban	Ross C. King, M. D. and J. F. Robbins, M. D. Clinton
3. H. W.	45	F	Housewife	Pos.	5–22	5–25	1–160	Muscatine	Rural	J. L. Klein, Jr., M. D. Muscatine
4. F. W.	38	F	Farmwife	?	5–29	6–1	1–80	Wright	Rural	I. H. Rarick, M. D. Eagle Grove
5. O. E.	29	M	Pack. House employee	Pos.	5–29	6–5	1–160	Wapello	Urban	F. L. Nelson, M. D. Ottumwa
6. B. P.	22	M	Farm visitor; dog owner	Pos.	5–30	6–2	1–640–	Polk	Urban	L. E. Keiley, M. D. Des Moines
7. A. G.	20	F	Housewife	Pos.	6–1	6–4	—	Adams	Rural	J. H. Wallahan, M. D. Corning
8. A. S.	40	M	Carpenter, on farms	Pos.	6–3	6–9	1–320	Jackson	Rural	John W. Jordan, M. D. Maquoketa
9. L. B.	19	M	Farm hand	?	6–10	6–14	1–160	Wayne	Rural	A.L. Yocom, M.D., Chariton B.S. Walker, M.D., Corydon
10. B. F.	31	M	Handles livestock	Pos.	6–10	6–16	1–320	Hamilton	Rural	B. F. Howar, M. D. Jewell
11. B. J. H.	16	F	School girl	Pos.	6–17	6–19	—	Appanoose	Rural	F. L. Nelson. M. D. Ottumwa

*Died.

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Vol. XXIX JULY, 1939 No. 7

NEW TREATMENT IN SERUM SICKNESS

The unpleasant and not infrequently serious reactions which still follow the administration of horse serum in a certain number of cases, despite improved methods of concentration, are always a source of worry to the physician. In the past the most effective agent for the treatment of the condition has been adrenalin; but relief, if obtained from this drug, is temporary, and in a few hours the patient is as badly in need of relief as before the administration. Occasionally, even when given in heroic doses, adrenalin has failed and a fatality has resulted.

It is with interest, therefore, that we review the report of Foshay and Hagebusch[1], describing their experiences in the treatment and prevention of serum sickness with a substance known as histaminase. According to the authors histaminase is a compound consisting of ferments derived from the intestinal mucosa which are destructive to histamine and histamine-like substances. It is supplied in enteric-coated tablets for oral use and in ampules for intramuscular injection. The authors undertook their study because Roth and Horton[2] had previously demonstrated that the oral administration of the enzyme histaminase would prevent the occurrence of symptoms in patients susceptible to cold allergy, and because Foshay had for several years felt that the major phenomena of serum sickness were due to "a release of histamine, or a histamine-like substance, in the tissues and into the circulation consequent on the union of serum protein antigens and antibodies".

The effect of histaminase administered orally to seven patients with severe serum sickness was satisfactory in all but two cases. The course of the disturbance in these two patients did not appear to be influenced in any way by the tablets. In the other five complete relief was secured in from seven to thirty-six hours. One of the patients had an edema of the glottis with marked difficulty in respiration, in addition to universal edema and intense urticaria. Epinephrine in doses of one cubic centimeter every fifteen to twenty minutes for more than ten hours gave only partial relief, but noticeable relief began twelve hours after histaminase administration was begun. In a group of twelve patients treated with intramuscular injections of histaminase no failures were recorded. All were markedly relieved within thirty-six hours. One patient who had been on tablets for three days without relief, obtained definite relief within twelve hours after the first intramuscular injection.

The authors also endeavored to determine the prophylactic effect of histaminase. In six of eight patients to whom both tablets and injections were given, no serum sickness occurred. The other two showed only a few transitory wheals. One patient was given a total of 453,000 units of gas gangrene antitoxin without at any time developing signs or symptoms of serum sickness. Drs. Foshay and Hagebusch modestly state they cannot say from their present small experience that their hypothesis concerning the cause and nature of serum sickness has been verified. However, they believe their results have been sufficiently significant to justify further trials with histaminase. As far as they were able to observe no untoward by-effects or after-effects resulted from either the oral or intramuscular use of the enzyme.

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THE SMALLPOX SITUATION IN IOWA

For too long now Iowa has been numbered among those states in which a disgracefully high case rate of smallpox prevails. Figures recently released by the Metropolitan Life Insurance Company* show that for the year 1938 only six states in the entire country exceeded Iowa in cases per 100,000 of population. The same source yields other interesting data regarding the smallpox situation which we, who pride ourselves upon the legitimate claim of our state to "first" ranking in so many fields, may well pause to consider. Last year in the New England states and the states of New York, Pennsylvania, New Jersey, Delaware, Maryland and the District of Columbia, with a combined population of 39,000,000 people, not a

*A New Peak for Smallpox. Statistical Bulletin, Metropolitan Life Insurance Company, xx:2-6 (May) 1939.

single case of smallpox was reported! In the same year a total of 15,000 cases of the disease was reported for the entire country. Of these, 14,166 occurred in the states lying north of the Ohio and West of the Mississippi Rivers.

No problem is presented in seeking an explanation for this unfavorable comparison between western and eastern states in smallpox control. Every medically minded individual knows that some sort of compulsory regulations prevail in the areas cited in the east, and that they do not prevail in the west. A problem does exist, however, when one attempts to answer the query as to why an enlightened citizenry so complacently permits this loathesome disease to continue, year after year, when the means for its eradication are so simple, and the results are so certain, both of which have been conclusively demonstrated.

The Committee on Child Health and Protection of the Iowa State Medical Society in conjunction with the State Department of Health has considered the problem and in the absence of any immediate likelihood of enactment of a compulsory vaccination law, has recommended to the House of Delegates at its annual session in April, a statewide "drive" against smallpox. The recommendation was approved by the House. Recently this committee and officials from the State Department of Health met again and outlined the details of the forthcoming campaign. November of this year has been selected as the month in which the vaccinations will be done. Success in the venture will depend upon the extent to which the county medical societies cooperate. With the wholehearted participation of a majority of them, the incidence of smallpox can indubitably be materially lowered in Iowa. The Journal sincerely hopes that every county society will take the matter seriously and will make an honest effort to see to it that all the residents in their respective localities at least have an opportunity to be protected.

The defect in this method of attacking a disease is the obvious one that unless the drive is persisted in year after year, conditions soon revert to their former, or near former, level. Iowa can hardly hope to duplicate the record achieved by the Atlantic seaboard states until compulsory vaccination regulations are adopted here similar to the ones obtaining in those states. The Journal believes the time has come when a serious campaign should be undertaken to secure passage of a legislative edict which will end smallpox within our borders. In the meantime let us do the best we can to inform our people that smallpox is a wholly unnecessary illness, and 39,000,000 people have proved it so.

COMING MEETINGS

Because we feel that many of the members of the Iowa State Medical Society may be interested in a number of national and special meetings, we are herewith publishing a calendar of the approaching sessions. More detailed information may be secured from the Journal office.

American Board of Ophthalmology. Examinations for 1939 are scheduled as follows: written, August 5; oral, October 6, Chicago. Secretary, Dr. John Green, 6830 Waterman Ave., St. Louis, Missouri.

American Board of Internal Medicine. Written examinations will be held October 16, 1939 (formal application must be received by August 20, 1939); and February 19, 1940 (application must be received before January 1, 1940). Secretary, Dr. William S. Middleton, 1301 University Avenue, Madison, Wisconsin.

The Eighteenth Annual Scientific and Clinical Session of the American Congress of Physical Therapy, September 5 to 8, 1939, Hotel Pennsylvania, New York City. Executive Director, A. R. Hollender, M.D., 30 North Michigan Avenue, Chicago, Illinois.

First American Congress on Obstetrics and Gynecology, September 11 to 15, 1939, Cleveland, Ohio. Address secretary at 650 Rush St., Chicago, Illinois.

Third Congress of the Pan-Pacific Surgical Association, September 15 to 28, 1939, Honolulu, Hawaii. Sail from Los Angeles, September 7, or San Francisco, September 8. Address Dr. George W. Swift, 902 Boren Avenue, Seattle, Washington; or Dr. Forrest J. Pinkerton, Young Building, Honolulu, Hawaii.

Fifth Annual Meeting of the Mississippi Valley Medical Society, September 27 to 29, 1939, Burlington, Iowa. Secretary, Dr. Harold Swanberg, Quincy, Illinois.

Forty-fourth Annual Convention American Academy of Ophthalmology and Otolaryngology, October 8 to 13, 1939, Palmer House, Chicago. Address Academy at 1500 Medical Arts Building, Omaha, Nebraska.

Sixty-eighth Annual Meeting of the American Public Health Association, October 17 to 20, 1939, Hotel William Penn, Pittsburgh, Pennsylvania. Secretary, Dr. R. M. Atwater, 50 West 50th Street, New York, N. Y.

Annual Conference of the National Society for the Prevention of Blindness, October 26 to 28, 1939, Astor Hotel, New York, N. Y. Complete program may be obtained by addressing the Society's offices, 50 West 50th Street, New York, N. Y.

Eighty-ninth Annual Session, Iowa State Medical Society, May 1, 2 and 3, 1940, Hotel Fort Des Moines, Des Moines, Iowa.



The Official Gavel

The gavel which is now the official gavel of the Iowa State Medical Society was made and presented by Arthur W. Erskine to Thomas A. Burcham, president of the society, at the Eighty-fourth Annual Session of the Iowa State Medical Society. In order that the history of this gavel may become a matter of record, and one with which all members of the state society are familiar, the gavel is pictured, and the presentation and acceptance speeches are herewith given.

Arthur W. Erskine: From my experience with the Iowa State Medical Society, I am convinced, Mr. President, that when you preside over the deliberations of this body, you will need a much sturdier instrument than the beautiful gavel just presented to you, which you will treasure to the last day of your life. A year ago I brought a piece of native wood from a little island in the Adriatic Sea which, in the days before the dawn of Greek civilization, was called Epidaurus. It was on the moonlit slopes of Epidaurus that, according to the oracle, Phoebus Apollo seduced the fair robed nymph, Coronis. From that union of strength and wisdom with beauty and grace was born the great, the wise, the good Aesculapius. I believe I have confirmed beyond any shadow of reasonable doubt that this wood which I brought home with me comes from a tree which is a direct descendant of the one from which the original Aesculapian staff was hewn. I think it is fitting, Mr. President, that from this wood about which the classic Aesculapian serpent twined in ancient times, from this wood steeped in a rich tradition of endeavor and achievement, should be wrought an emblem of unity, of strength, and of authority. Therefore, I have carved from this wood a gavel which symbolizes the ancient code by which we govern our lives and the high and honorable calling we serve. It is my honor and pleasure to present this gavel to you, to do with as you choose. I pray to Apollo, and to Hygeia, to Panacea, and to Aesculapius, the Father of us all, that the need may never arise when it shall be used to quell dissension in this brotherhood.

Thomas A. Burcham: Thank you, Dr. Erskine. You have just heard Dr. Erskine state that this gavel was made from a piece of wood of the tree, or a descendant of the tree, from which the original staff of Aesculapius was obtained. Dr. Erskine has beautifully described the Greek mythology pertaining to the God of Medicine. However, he failed to emphasize that it was he, himself, who so beautifully decorated this gavel with hand carving. On the anterior surface of the head of the gavel, in raised letters, are the words "Iowa State Medical Society." On either side of the head is the staff of Aesculapius around which is entwined the serpent. This is the symbol of medicine and is now the official insignia of the American Medical Association. Carved on the posterior surface of the head on one side of the handle is the name "Epidaurus" and on the other side, in Roman numerals, "1935."

Dr. Erskine has presented this gavel to me in my capacity as president of the Iowa State Medical Society, and has told me I am free to do with it as I please. Because it comes from Dr. Erskine, who for many years has been my close personal friend, and because I appreciate the time and skill expended in carving this gavel, my first impulse and desire is to keep it as my very own. Knowing the sincere love Dr. Erskine holds for the profession he so nobly represents and exemplifies, and knowing what affection he has for his colleagues, can you blame me for wanting to keep this symbol of his profound devotion?

However, instead of being selfish, I am going to present this gavel to the Iowa State Medical Society as a working gavel, which I know Dr. Erskine would want me to do, so that each member of the society may share in the joy of its possession. I, too, hope, as Dr. Erskine has already said, that neither I, nor any president of this society in years to come, may have need to raise this gavel to quiet dissension in our ranks.

If in the years to come this gavel should become wrecked or unserviceable, I hope that it may be retained in the central office of the society, and that the history of its presentation by Dr. Erskine may become a part of the archives of the society.

Minutes of the Iowa State Medical Society
Eighty-eighth Annual Session
April 25, 26 and 27, 1939

Tuesday Morning, April 25, 1939

The opening session of the Eighty-eighth Annual Session of the Iowa State Medical Society, held at the Hotel Fort Des Moines, April 25 to 27, 1939, convened at eight forty-five o'clock, Dr. Arthur W. Erskine, Cedar Rapids, president, presiding.

The invocation was delivered by Reverend Stoddard Lane.

Dr. Russell C. Doolittle, president of the Polk County Medical Society, greeted the assembly and welcomed it to Des Moines. Dr. George C. Albright of Iowa City, second vice president of the Iowa State Medical Society, gave the response for the society.

Dr. Erskine introduced Dr. Soma Weiss, associate professor of medicine, Harvard University Medical School, Boston, Massachusetts. Dr. Weiss, the medical guest speaker, spoke to the assembly on the subject: "Treatment of Circulatory Collapse and Shock."

Dr. Erskine next introduced Dr. N. Frederick Hicken of Omaha, who presented "The Diagnosis of Breast Tumors with Management of Carcinoma." His paper was discussed by Dr. Charles S. Krause of Cedar Rapids and Dr. H. Dabney Kerr of Iowa City, following which Dr. Hicken gave the closing remarks.

The next speaker presented by Dr. Erskine was Dr. Edwin A. Merritt, director of the Radiological Department, Warwick Cancer Clinic, Washington, D. C. Dr. Merritt gave a talk on the subject "Hyperparathyroidism and Its Roentgen Treatment."

Dr. Erskine then gave his presidential address, following which the meeting adjourned at eleven forty-five o'clock.

Wednesday Morning, April 26, 1939

The Wednesday morning meeting convened at nine o'clock, with President Erskine presiding.

Dr. Frank H. Lahey of Boston, Massachusetts, gave the first paper, an address on the subject "New Ideas in Thyroid Surgery." He was followed by Dr. William H. Holmes, professor of medicine, Northwestern University Medical School, Chicago, Illinois, who discussed "Bacillary Dysentery."

The third paper of the morning was on the subject "Medical Department of the United States Army in Civilian Conservation Corps Activities," by Lt. Col. C. D. Pillsbury, M.D., Omaha, Nebraska.

Following this paper, the meeting adjourned during the noon hour, and reconvened at one-thirty to hear Dr. William L. Benedict, professor of ophthalmology, University of Minnesota Graduate School, Rochester, Minnesota. Dr. Benedict spoke on the subject "The Etiology of Choreoretinitis."

The meeting adjourned about two-fifteen o'clock.

Thursday Morning, April 27, 1939

The meeting convened at nine o'clock. Dr. Erskine introduced Dr. Donald C. Conzett, chairman of the Fracture Committee, and turned the chair over to him.

The first paper was given by Dr. William G. Bessmer of Davenport. His subject was "Fractures About the Ankle Joint."

Dr. Harold Conn of Akron, Ohio, was unable to attend the meeting, and his paper and slides on the subject "The Treatment of Fractures of the Spine" were presented by Dr. Conzett.

Dr. Fred L. Knowles of Fort Dodge discussed the subject "The External Bone Bridge for the Internal Fixation of Fractures."

The fourth paper on the fracture symposium was given by Dr. Willis C. Campbell of Memphis, Tennessee, who spoke on the subject "Use of Vitallium for Fixation of Fractures."

Dr. Erskine assumed the chair and introduced Dr. Irvin Abell of Louisville, Kentucky, president of the American Medical Association. Dr. Abell addressed the assembly on the subject of the National Health Program, discussing each section in detail.

Dr. Erskine introduced the new president-elect, Dr. F. P. McNamara of Dubuque, and then installed Dr. Felix A. Hennessy of Calmar as president of the society. Dr. Parker announced the names of the section chairmen for the coming year: Dr. F. Earl Bellinger of Council Bluffs, surgical section; Dr. Philip C. Jeans of Iowa City, medical section; and Dr. Edwin Cobb of Marshalltown, eye, ear, nose and throat section.

The meeting adjourned at eleven-fifty o'clock.

Section on Medicine

Tuesday Afternoon, April 25, 1939

The first session of the Section on Medicine, held in connection with the Eighty-eighth Annual Session of the Iowa State Medical Society, at the Hotel Fort Des Moines in Des Moines, April 25 to 27, 1939, convened at two p.m., with Dr. Ben G. Budge of Ames, chairman of the section, presiding.

The following papers were presented:

"The Jaundiced Bleeder; Control of Hemorrhage Through Vitamin K Therapy," by Dr. Harry P. Smith of Iowa City. This was discussed from the floor.

"The Nervous Heart," by Dr. Benjamin F. Wolverton of Cedar Rapids; discussed by Dr. Julian E.

McFarland of Ames and Dr. Harold E. Graber of Fairfield.

A symposium on the relation of alcohol and driving was the next subject considered. Dr. Harold W. Morgan of Mason City gave a demonstration and short talk on the subject "Determination of Alcohol in the Blood and Urine." This was followed by a paper "Effects of Various Amounts of Alcohol on the Driver" given by Mr. A. R. Lauer of Ames, of the State Safety Council. The third paper of the symposium was given by Judge T. G. Garfield of Ames on the subject "Medical-Legal Aspect of Alcohol in Road Accidents."

The last paper was entitled "Neurosis and Digestive Disorders," and was presented by Dr. Harold C. Bone of Des Moines; discussed by Dr. George H. Clark of Oskaloosa and Dr. Raymond S. Grossman of Marshalltown.

The meeting adjourned at four-thirty o'clock.

Wednesday Afternoon, April 26, 1939

The meeting convened shortly after two o'clock, with Chairman Budge presiding. The first paper, on the subject "What Constitutes Adequate Treatment of the Child with Diabetes Mellitus?", by Dr. Julian D. Boyd and Dr. Robert L. Jackson of Iowa City, was presented by Dr. Jackson; discussed by Dr. Robert O. Hughes of Ottumwa and Dr. E. B. Winnett of Des Moines.

Dr. Robert N. Larimer of Sioux City presented a paper on the subject "The Serum Treatment of Pneumonia" and called upon Dr. Fenton of the United States Public Health Service to speak to the group. Dr. Elmo E. Gamet of Lamoni discussed the paper.

Other papers were as follows:

"Encephalitis" by Dr. Hiram B. Henry of Des Moines; discussed by Dr. Donald W. Leik of Dubuque.

"Insomnia" by Dr. J. Stuart McQuiston of Cedar Rapids; discussed by Dr. Matthew T. Morton of Estherville and Dr. Frank H. Clark of Clarinda.

"Blood Sedimentation Tests and Their Value," by Dr. Fred H. Lamb of Davenport, discussed by Dr. Frederick A. Hecker of Ottumwa and Dr. Dale D. Cornell of Greenfield.

The meeting adjourned at four-thirty o'clock.

Section on Surgery

Tuesday Afternoon, April 25, 1939

The first session of the Section on Surgery, held in connection with the Eighty-eighth Annual Session of the Iowa State Medical Society, at the Hotel Fort Des Moines, Des Moines, April 25 to 27, 1939, convened at two o'clock, with Dr. Frank M. Keefe of Clinton, chairman of the section, presiding.

The following papers were presented:

"Technic of Examination of the Spine with Manipulative Treatment," by Dr. Leo J. Miltner of Davenport; discussed by Dr. Arch F. O'Donoghue of Sioux City and Dr. Fred L. Knowles of Fort Dodge.

"Some Recent Developments in Plastic Surgery," by Dr. Leo H. LaDage of Davenport; discussed by Dr. Frank R. Peterson of Iowa City.

"Hydronephrosis," by Dr. Lawrence E. Pierson of Sioux City; discussed by Dr. Jennings Crawford of Cedar Rapids and Dr. F. Harold Entz of Waterloo.

"Treatment of Traumatic Injuries of the Abdominal Cavity, its Wall and Contents," by Dr. William E. Cody of Sioux City; discussed by Dr. Carl J. Lohmann of Burlington and Dr. Elbert E. Munger, Jr., of Spencer.

"Traumatic Lesions of the Thorax and Its Contents," by Dr. Walter A. Anneberg of Carroll; discussed by Dr. Wade O. Preece of Waterloo and Dr. N. Boyd Anderson of Des Moines.

The meeting adjourned at four-thirty o'clock.

Wednesday Afternoon, April 26, 1939

The second meeting of the Section on Surgery convened shortly after two o'clock Wednesday afternoon, with Chairman Keefe presiding.

The following papers were presented:

"Cancer of the Colon and Rectum" by Dr. Frank H. Lahey of Boston, Massachusetts.

"Acute Pelvic Lesions in the Female, Diagnosis and Modern Management," by Dr. Cecil W. Seibert of Waterloo; discussed by Dr. Addison W. Brown of Iowa City and Dr. Roy I. Theisen of Dubuque.

"Practical Points in X-ray Diagnosis in Surgery," by Dr. Thomas A. Burcham of Des Moines; discussed by Dr. Hubert K. Knudsen of Clinton.

"Appendicitis: Mortality and Management," by Dr. Arnold L. Jensen of Council Bluffs; discussed by Dr. Henry J. Heusinkveld of Clinton and Dr. Donovan F. Ward of Dubuque.

The meeting adjourned at four-thirty o'clock.

Section on Ophthalmology, Otology and Rhinolaryngology

Tuesday Afternoon, April 25, 1939

The opening meeting of the Section on Ophthalmology, Otology and Rhinolaryngology, held in connection with the Eighty-eighth Annual Session of the Iowa State Medical Society, at the Hotel Fort Des Moines in Des Moines April 25 to 27, 1939, convened at two o'clock. Dr. Thomas R. Gittins of Sioux City, chairman of the section, presided.

The following papers were presented:

"Oral Lesions in Otolaryngology," by Dr. Dean M. Lierle of Iowa City.

"Perennial Type of Nasal Allergy," by Dr. James E. Reeder of Sioux City; discussed by Dr. F. Harold Reuling of Waterloo and Dr. Warren H. Foster of Clinton.

"Herpetic Lesions of the Cornea," by Dr. Carl A. Noe of Cedar Rapids; discussed by Dr. Joseph E. Dvorak of Sioux City and Dr. John H. Matheson of Des Moines.

"Lateral Sinus Infection and Its Therapeutic Indications," by Dr. Gordon F. Harkness of Davenport; discussed by Dr. J. Kenneth von Lackum of Cedar Rapids and Dr. Henry C. Schmitz of Des Moines.

"Nonspecific Foreign Protein Therapy in Ocular Therapeutics," by Dr. Sydner D. Maiden of Council Bluffs; discussed by Dr. Charlie E. Chenoweth of Mason City and Dr. Lawrence A. Taylor of Ottumwa.

Wednesday Afternoon, April 26, 1939

The second meeting of the Section on Ophthalmology, Otology and Rhinolaryngology was called to order about two-fifteen o'clock Wednesday, April 26, by the chairman, Dr. Gittins.

The following papers were presented:

"Eye Disorders Due to Exogenous Toxemia," by Dr. William L. Benedict of Rochester, Minnesota.

"The Commoner Types of Conjunctivitis," by Dr. Cecil S. O'Brien of Iowa City.

"Nerve Deafness," by Dr. James A. Downing of Des Moines; discussed by Dr. Royal F. French of Marshalltown and Dr. Sidney G. Hands of Davenport.

"Status of Ophthalmologists and Otolaryngologists in a State Medical System," by Dr. Sumner B. Chase of Fort Dodge; discussed by Dr. Charles L. Chambers of Des Moines.

The meeting adjourned at four-thirty o'clock.

Transactions of the House of Delegates

Iowa State Medical Society, Eighty-eighth Annual Session

April 25, 26 and 27, 1939

Tuesday Afternoon, April 25, 1939

The first session of the House of Delegates, held in connection with the Eighty-eighth Annual Session of the Iowa State Medical Society, at the Fort Des Moines Hotel, Des Moines, April 25 to 27, 1939, convened at three forty-five o'clock, Dr. Felix A. Hennessy, presiding.

The Speaker: The first order of business is the roll call.

Secretary Parker: Mr. Speaker, I *move* that the signed attendance cards constitute the official roll call of the House.

The motion was seconded, put to a vote and carried.

The roll call showed the following delegates, alternates, and state society officers present:

Delegates

Appanoose	J. C. Donahue
Audubon	L. E. Jensen
Benton	G. W. Yavorsky
Black Hawk	E. E. Magee
Boone	A. B. Deering
Bremer	L. C. Kern
Buchanan	H. A. Householder
Buena Vista	M. A. Armstrong
Carroll	O. P. Morganthaler
Cass	W. S. Greenleaf
Cerro Gordo	H. D. Fallows
Clarke	C. R. Harken
Dallas-Guthrie	E. T. Warren
Davis	C. H. Cronk
Decatur	G. P. Reed
Des Moines	J. T. Hanna
Dubuque	D. C. Conzett
Fayette	Howard Risk
Floyd	O. H. Banton
Fremont	Kenneth Murchison
Greene	G. W. Franklin
Grundy	R. T. Spain
Harrison	E. J. Cole
Henry	W. A. Sternberg
Ida	R. B. Armstrong
Jackson	E. A. Hanske
Jefferson	H. E. Graber
Johnson	G. C. Albright
Johnson	E. M. MacEwen
Johnson	A. W. Bennett
Keokuk	C. L. Heald
Kossuth	R. M. Wallace
Lee	B. J. Dierker
Linn	J. K. von Lackum
Linn	T. F. Suchomel
Louisa	L. E. Weber
Lyon	F. B. O'Leary
Madison	I. K. Sayre
Marion	C. S. Cornell
Marshall	A. D. Woods
Mills	D. W. Harman
Monona	E. C. Junger
Monroe	T. A. Moran
Montgomery	W. S. Reiley
Muscatine	L. C. Howe
O'Brien	W. R. Brock
Page	J. F. Aldrich
Plymouth	W. J. Brunner
Polk	L. F. Hill
Polk	J. A. Downing
Polk	W. E. Baker
Pottawattamie	F. E. Bellinger
Poweshiek	S. D. Porter
Ringgold	E. J. Watson
Sac	L. B. Amick
Scott	W. C. Goenne
Scott	George Braunlich
Story	W. B. Armstrong
Taylor	G. W. Rimel
Union	J. A. Liken
Warren	C. A. Trueblood
Washington	W. L. Alcorn
Wayne	B. S. Walker
Wright	R. D. Bernard

Alternates

Adams	C. L. Bain
Allamakee	J. W. Thornton
Butler	J. G. Evans
Calhoun	W. W. Stevenson
Clarke	F. S. Bowen
Clay	E. E. Munger, Jr.
Clinton	H. A. Amesbury
Delaware	J. L. Keane
Jasper	J. C. Hill
Johnson	R. H. Heeren
Scott	R. E. Peck
Wayne	A. E. Davis
Woodbury	A. C. Starry
Woodbury	R. N. Larimer

State Society Officers

President	A. W. Erskine
President-elect	F. A. Hennessy
Secretary	R. L. Parker
Treasurer	H. J. McCoy
Trustee	O. J. Fay
Trustee	J. I. Marker
Trustee	L. R. Woodward
Councilor	L. L. Carr
Councilor	C. H. Cretzmeyer
Councilor	F. P. Winkler
Councilor	J. E. Reeder
Councilor	E. B. Bush
Councilor	C. W. Ellyson
Councilor	F. P. McNamara
Councilor	C. A. Boice
Councilor	H. A. Spilman
Councilor	J. G. Macrae
Councilor	M. C. Hennessy

The Speaker: The second order of business is the approval of the minutes of the Friday morning session, 1938. What is your pleasure?

Dr. Hanna: I *move* that the minutes be approved as published.

The motion was seconded, put to a vote and carried.

The Speaker: We will have the report of the Secretary.

Reports of Officers

REPORT OF THE SECRETARY

To the Members of the House of Delegates:

The following report for the year 1938 is respectfully submitted:

MEMBERSHIP

The membership record for 1938, as set out in the tabulated report* may be summarized as follows:

Active Members (Life Members Included)	2,391
Delinquent Members	51
Eligible Non-Members	209
Ineligible Non-Members	93
Physicians Retired or Not in Practice	164

We should appreciate it if each county society secretary would check this list with his own figures, and notify us if our record does not agree with his.

There are thirty-one counties with one hundred per cent membership in the State Society. They are as follows:

Adair	Louisa
Adams	Madison
Audubon	Marshall
Boone	Osceola
Calhoun	Palo Alto
Cerro Gordo	Poweshiek
Chickasaw	Scott
Davis	Shelby
Dickinson	Story
Emmet	Tama
Floyd	Van Buren
Hardin	Washington
Henry	Wayne
Howard	Webster
Ida	Winneshiek
Wright	

Counties attaining this figure in 1938, who were not one hundred per cent before, are Davis, Dickinson, Floyd, Hardin, Henry, Louisa, Madison and Wayne. Those who fell from the top rank in 1938 were Buchanan, Clarke, Fremont, Lyon and Ringgold. We hope they will return to the one hundred per cent mark in 1939.

*See next page.

We attempt to keep on file in the State Society office an accurate record of all members and other physicians throughout the state. Twice a year we ask the county society secretaries to help us by checking the list with their own records. Their cooperation makes it possible for the central office to maintain a correct, up to the minute file of the state. A prompt report of all deaths occurring in the county societies, together with all removals or new physicians is essential. The county society secretaries have rendered splendid service in keeping us informed of these changes in membership, and we appreciate their cooperation.

Life Members

Last year the House of Delegates passed a new rule regarding life membership in the State Society. That ruling now reads: "Any member of the Society who is in good standing may be entitled to life membership provided he has been recommended for such membership by his county society. He shall receive the transactions of the Society and enjoy all the privileges of members, and may be exempted from the payment of dues upon the vote of the House of Delegates."

The central office has received many inquiries about life membership, and has quoted this rule to the county society secretaries. The interpretation we place upon this ruling is that the applicant must be in good standing for the current year, which means that his dues are paid; he must be recommended for life membership by his county society, which means he should be made a life member of the county society and a similar request be made of the State Society by the delegate from the county society. The House of Delegates of the State Society then acts upon the recommendation, and upon its vote, may exempt the applicant from the payment of dues.

When this matter was discussed in the House of

1938 MEMBERSHIP RECORD

County	1938 Membership	Delinquent Members	Eligible Non-Members	Ineligible Non-Members	Not in Practice or Retired	Percentage of Eligible Physicians Who Are Members
Adair	9	------	------	------	1	100
Adams	8	------	------	------	------	100
Allamakee	7	1	3	1	------	64
Appanoose	11	1	3	------	2	73
Audubon	10	------	------	------	------	100
Benton	20	------	4	------	1	83
Black Hawk	63	------	3	6	6	95
Boone	22	------	------	------	1	100
Bremer	16	------	2	1	------	89
Buchanan	20	1	------	1	1	95
Buena Vista	18	1	2	------	1	86
Butler	9	------	6	------	1	60
Calhoun	20	------	------	------	1	100
Carroll	22	1	2	1	3	88
Cass	20	------	1	2	2	95
Cedar	10	3	6	------	------	53
Cerro Gordo	47	------	------	2	------	100
Cherokee	15	1	4	------	2	75
Chickasaw	14	------	------	------	------	100
Clarke	9	1	------	------	------	90
Clay	12	------	4	2	1	75
Clayton	18	1	5	------	1	75
Clinton	44	------	6	2	2	88
Crawford	13	------	1	1	------	93
Dallas-Guthrie	43	------	5	1	2	90
Davis	11	------	------	------	2	100
Decatur	8	1	1	1	------	80
Delaware	11	2	7	------	1	55
Des Moines	35	------	7	1	2	83
Dickinson	14	------	------	------	------	100
Dubuque	67	------	4	------	2	94
Emmet	12	------	------	------	------	100
Fayette	21	1	9	1	2	68
Floyd	16	------	------	1	1	100
Franklin	11	1	1	------	------	85
Fremont	12	1	------	------	------	92
Greene	22	1	2	------	1	88
Grundy	9	1	2	------	------	75
Hamilton	16	------	3	------	4	84
Hancock-Winnebago	19	1	3	------	3	82
Hardin	26	------	------	------	5	100
Harrison	16	1	2	1	------	89
Henry	18	------	------	------	1	100
Howard	10	------	------	------	1	100
Humboldt	5	------	2	1	------	71
Ida	14	------	------	------	2	100
Iowa	12	------	3	------	4	80
Jackson	16	------	1	1	1	94
Jasper	27	2	3	------	2	84
Jefferson	17	------	1	------	2	94
Johnson	127	5	6	------	6	92
Jones	11	------	2	2	------	85
Keokuk	15	------	2	5	------	88
Kossuth	15	------	2	1	1	88
Lee	38	2	6	4	1	83
Linn	102	------	8	4	4	93
Louisa	10	------	------	1	1	100
Lucas	13	------	1	------	1	93
Lyon	11	------	1	------	1	91
Madison	12	------	------	------	1	100
Mahaska	18	3	1	2	5	82
Marion	20	------	2	2	5	91
Marshall	45	------	------	1	3	100
Mills	12	------	1	------	------	92
Mitchell	12	------	3	------	------	80
Monona	14	------	1	------	1	93
Monroe	9	------	4	------	------	69
Montgomery	20	------	1	------	------	95
Muscatine	21	2	4	2	1	78
O'Brien	18	1	2	1	------	86
Osceola	8	------	------	------	------	100
Page	17	4	4	2	1	68
Palo Alto	13	------	------	------	------	100
Plymouth	12	------	7	1	2	63
Pocahontas	11	4	2	1	------	65
Polk	233	1	24	11	43	90
Pottawattamie	59	1	2	------	2	95
Poweshiek	24	------	------	------	------	100
Ringgold	7	2	------	1	------	78
Sac	20	------	1	------	------	95
Scott	93	------	------	13	2	100
Shelby	9	------	------	------	2	100
Sioux	14	1	2	------	------	82
Story	34	------	------	------	2	100
Tama	27	------	------	------	2	100
Taylor	7	1	3	------	1	64
Union	16	------	1	2	------	94
Van Buren	13	------	------	------	------	100
Wapello	40	------	2	2	------	95
Warren	10	------	2	1	------	83
Washington	24	------	------	------	1	100
Wayne	11	------	------	------	1	100
Webster	43	------	------	------	4	100
Winneshiek	15	------	------	1	------	100
Woodbury	114	1	3	6	5	97
Worth	5	------	1	------	------	83
Wright	24	------	------	------	1	100
Total	2,391	51	209	93	164	90

Delegates in 1937, the restriction of thirty years' consecutive membership was removed, and the matter of recommendation left to the county societies who should, after all, be the best judge of the merits of the applicants for life membership. Your Secretary urges that the county societies assume this responsibility and recommend only those physicians who are entitled to life membership by reason of disability, or long and meritorious service. Should there be a wholesale granting of life memberships, the financial support of the Society would be undermined, possibly seriously. The conferral of life membership upon a physician should stand as a recognition of merit, rather than as a means of escaping payment of dues.

County Society Contracts

The past two years have seen a movement of responsibility for the medical care of the indigent from the state back to the county. Many counties which have received state funds to help with this care are now dependent upon the tax money of the county, and the county Boards of Supervisors are once more in charge of the care of the indigent. In the long run this makes for a more satisfactory condition of affairs. In September the central office and the Medical Economics Committee helped seventeen counties which had been receiving state funds make more satisfactory contracts with their individual counties. The funds were increased and made accumulative, and should provide more amply for medical service during the year to come. On the whole, the problem of caring for the indigent seems to be on a more satisfactory basis at the end of 1938 than it has been for the past five years. In addition to care of the indigent, the Medical Economics Committee has formulated a plan for the care of one particular low income group, the Farm Security Administration clients. Experience gained from this may point the way to an extension of the plan to cover other low income groups, or may prove it impractical.

We should like to have in the central office a copy of every county society contract. The Medical Economics Committee needs this if it is to serve its greatest usefulness. At the present time we are relying on newspaper clippings for our information about many counties.

State Society Services

The central office exists for the good of the members of the State Society. It should be a clearing house to which you may bring your problems and from which you may gain the benefit of experience from other counties. Its equipment should be utilized for the good of the profession. We urge you to visit it when you are in Des Moines, and to call upon it for help at any time.

Financial Report

The financial report required of the Secretary is covered by the Treasurer's report which follows. The income and expense account is given in summarized form for your convenience again this year. You may see at a glance through what committees and channels expenditures have been made. The books of the Society have been audited by a certified public accountant, Widdup and Company, and a copy of his report is on file in the central office, and also with Dr. Marker and Dr. Woodward, trustees. Any physician wishing to see this detailed report is welcome to visit one of these trustees at any time and have free access to the report.

Robert L. Parker, Secretary

Secretary Parker: Mr. Speaker, I *move* that the secretary's report as published in the handbook be approved by this house.

The motion was seconded, put to a vote and carried.

The Speaker: Is the Treasurer, Dr. McCoy, here? Is there anyone here to make the report for the Treasurer? If not, we will pass on to the Board of Trustees. The Chairman of the Board of Trustees, Dr. Fay.

REPORT OF THE BOARD OF TRUSTEES

The minutes of all meetings of the Board of Trustees held during 1938 were published in the Journal so as to be available to all members of the Society. For that reason only a brief report, or summation, of its activities will be given at this time.

The year 1938 was an active one. The Board appreciates very much the splendid cooperation of all officers, councilors, committees and members of the State Society. Such unity of effort cannot help but make a stronger and better medical profession.

New economic problems which confronted the Society during the year necessitated the expenditure of funds not originally contemplated in the budget. The Board felt it important to meet these problems and was able to provide for them without reducing the surplus. Departments using more than the budgeted funds were the Speakers Bureau; administrative miscellaneous (expense of representatives and delegates to the American Medical Association regular and special meetings); general salaries (because of the imposition of social security taxes); the Council; and the Medical Economics Committee.

From time to time unusual bills are presented for payment. Every bill so presented is considered individually, and payment is governed by the By-Laws of the Society. Where the By-Laws do not cover a specific point, the Board must rely on its interpretation of the rules.

The safekeeping of the funds of the Society is the responsibility of the Board of Trustees. The Board is able and happy to report that the financial condition of the Society is an enviable one. It has not been necessary to increase the membership dues, as some state societies have done, and yet the Society has a good backlog in its surplus. This helps carry the burden of the activities of the Society. During 1938 the income from memberships was $21,895.00; from the Journal, Speakers Bureau, annual session and miscellaneous $14,684.23; or a total of $36,579.23. Expenditures equalled $37,406.09, making a deficit of $826.86. However, to be added to the surplus was

the income on bonds and savings, amounting to $1,434.56. Were it not for this addition, the Society would have operated at a deficit. Although demands upon the Society will undoubtedly be increased in the next few years, the Board recommends that the membership fee for 1940 remain at $10.00.

Oliver J. Fay, M.D., Chairman
John I. Marker, M.D.
Lee Roy Woodward, M.D.

Dr. Fay: Mr. Speaker, the Board of Trustees has no further report to make. I *move* that the report as published in the handbook be accepted by the House.

The motion was seconded, put to a vote and carried.

The Speaker: Report of the Council, Dr. Hennessy.

Dr. Hennessy: Through some unforeseen circumstance the report of the Chairman of the Council was not published in the handbook. I will read it.

REPORT OF THE CHAIRMAN OF THE COUNCIL

During the year 1938 the Council met on two occasions, the meetings being held to supervise the activities of the Council committees, which are the Speakers Bureau and the Cancer Committee. The Cancer Committee was increased in membership from three to five in an effort to provide representation more fully from the different areas of the state. A change in the Speakers Bureau chairmanship was made necessary by the retirement of Dr. Glomset. The Council member of the Speakers Bureau, Dr. Earl B. Bush, was designated as the Chairman for the year, and a committee of three from each councilor district was named to assist the Speakers Bureau in the different councilor districts.

The Council attended a special meeting of the House of Delegates which was called in the fall, and, also attended meetings of the Executive Committee as authorized at the last state meeting. The transactions of these meetings have already appeared in the Journal, and I feel they do not require any comment from me.

I refer you to the reports of the Chairmen of the Speakers Bureau and the Cancer Committee for a resumé of their activities during the year, and also to the reports of the individual councilors as to the activities of their councilor districts.

The Council met this noon, and I have an additional report to give. At our meeting on April 2, the matter of state licensing was discussed. It seems there are some individuals in the state who are practicing medicine, or exercising the duties of doctors in this state, without licenses. We appointed a committee to investigate the situation and report back to us today. The committee did this, and the Council makes this recommendation:

"The Council recommends that the House of Delegates authorize the appointment of a committee to investigate the issuance of licenses in the state, and also the employment of non-licensed physicians by the state of Iowa, including salaries authorized, with a view to the correction of the various abuses which we believe exist at the present time."

REPORTS FROM COUNCILOR DISTRICTS

First Councilor District

In reviewing the Deputy Councilor's reports, I find that the first district has made a gain in membership. Talking with various doctors throughout the district I find that a spirit of marked encouragement prevails in regard to organized medicine. In every county some medical relief system that works more or less satisfactorily is in existence and the indigent patient is getting the very best of care. The big problem of the low income group is also being solved, to a large extent, by insurance plans, and by taking advantage of the "cost case" arrangement at the University Hospital in Iowa City.

Regular meetings combining social and scientific programs are the rule throughout the district. In some counties of small memberships, union meetings of four counties have been held to the advantage of all concerned.

Our district sponsored an Orthopedic Clinic, under the supervision of Dr. Arthur Steindler, ably assisted by Dr. Eugene Wolcott. One hundred and forty cases were seen at Oelwein, and about the same number at Charles City. There is no question as to the great amount of good resulting from the clinics.

Late in the year, Dr. C. K. McCarthy of the State Department of Health began his tuberculosis campaign in our district. This is to be continued on into 1939. The new idea of examining the contact cases is sure to bring about some excellent results.

A six-lecture postgraduate course, under the direction of the Speakers Bureau, was held in West Union during the fall months. The speakers were all from the University at Iowa City. The course was very satisfactory and we are grateful to every doctor who appeared on our program, and especially to Dean E. M. MacEwen for making the whole course possible.

L. L. Carr, Councilor

The individual reports for counties in the first district are as follows:

Allamakee County. The Allamakee County Medical Society has seven active members from a possible ten. We have one ineligible physician and two not in active practice.

The Iowa Emergency Relief plan was in force until November, at which time a contract with the Board of Supervisors, modeled closely after the Iowa plan, was made. This contract contains the same fee schedule and also has a medical committee to audit the bills. Three of our members attended postgraduate courses. We have no interprofessional society. Immunization programs in many towns and some townships have been carried out.

John W. Thornton, Deputy Councilor

Bremer County. Bremer County Medical Society held monthly scientific meetings throughout the year. We have twenty-two active members, which is one hundred per cent for our county.

The relief program is an agreement with the county supervisors and has been satisfactory. Ten of our members attended a postgraduate course at Waterloo.

Our public health program included an annual check of the high school and Wartburg college students for general physical condition and specifically for diphtheria and smallpox vaccination. The same program was carried out in other towns throughout the county.

P. K. Graening, Secretary
E. C. Kepler, Deputy Councilor

Chickasaw County. Chickasaw county, with fourteen active members, and the same number eligible, had one hundred per cent membership for 1938.

Our medical relief setup is only a county plan not associated with the state, and it is only fairly satisfactory to all the doctors.

No postgraduate course was held in the county but some members attended courses in surrounding counties. As to public health, we sponsored a county diphtheria immunization program. We have no interprofessional organization.

Paul E. Gardner, Deputy Councilor

Clayton County. Clayton county had a membership of twenty-one out of twenty-six eligible physicians during 1938, there being three new members added during the year. One new physician located in the county and one retired physician died.

The Iowa Medical Relief plan of the Iowa Emergency Relief Administration organized in 1935 has been followed since its inception. The doctors feel that the schedule of fees under this plan is too low, and that they are doing the work mostly as charity.

There was no postgraduate course in this county, but four physicians attended a course in a neighboring county.

A tuberculosis clinic was sponsored by the county society. The county has an interprofessional organization, but it is not active.

J. W. Hudek, Deputy Councilor

Fayette County. We have nineteen active members, or about sixty per cent. We have several members who, from poor health, are not in very active practice and therefore are not active in the society. We do have three more members than in 1937. There was one death in our county, Dr. Patterson of Oelwein, Iowa.

Our medical relief setup is a reduced fee bill and agreement with the county supervisors and is only fairly satisfactory.

We had a postgraduate course of six lectures presented by the faculty of our University at Iowa City. About thirty attended this course and seemed well pleased.

Public health programs were carried on in many towns, chiefly immunization against diphtheria and smallpox. We have no interprofessional organization.

C. C. Hall, Deputy Councilor

Floyd County. Nineteen thirty-eight was another one hundred per cent membership for the Floyd County Medical Society.

The practice vacated at Nora Springs by Dr. David Holman was filled by Dr. L. A. Bascom; otherwise membership remains the same.

We are continuing with the same medical relief setup, namely, a percentage basis of the regular fee schedule regulated by the County Board of Supervisors. This has been quite satisfactory.

The Cedar Valley Hospital Clinical Society has regular monthly scientific meetings and has carried out an extensive diphtheria immunization program in the public schools this past year.

Our interprofessional organization is not active.

Ray A. Fox, Deputy Councilor

Howard County. Howard County Society is again one hundred per cent in membership. There are no new men in the county and no deaths or removals.

Our medical relief setup is similar to the state plan but we receive no state aid. The plan has been unchanged for the past three years and is satisfactory.

We had no postgraduate course in the county but three of our members attended courses elsewhere.

We have had no county society public health program but cooperated with Winneshiek county in an orthopedic program and cooperated one hundred per cent with the tuberculosis survey, tuberculin testing and x-ray.

We have no interprofessional organization. We had one meeting of the county medical society.

William A. Bockoven, Deputy Councilor

Mitchell County. Mitchell county held its regular meetings during 1938, with two more active members than in 1937. We have no new physicians and there were no deaths during 1938.

Our medical relief plan continues the same and is quite satisfactory.

There were no postgraduate courses in our county, but some members attended courses outside the county.

Mitchell county sponsored a county-wide immunization program in the schools for both diphtheria and smallpox, with splendid cooperation between all parties concerned.

As yet we have no interprofessional organization nor Woman's Auxiliary.

T. S. Walker, Deputy Councilor

Winneshiek County. Winneshiek county had one hundred per cent membership for 1938.

Our medical relief setup is in accordance with the plan that was adopted a few years ago by the Iowa Emergency Relief Administration. It is directed by the relief director, who looks after the indigents on behalf of our county supervisors, and is financed by the county relief funds. The same fee schedule is being followed and all medical bills are being audited by a committee of three, the deputy councilor acting as chairman and approving all bills. The other two who assist in auditing these bills are the secretary and president of the county medical society. The physicians seem to be well satisfied with this setup, because there is no quibbling with the supervisors.

A few of our members attended an extension postgraduate course at West Union last autumn.

No public health program has been sponsored during the past year except that the county society cooperated with the State Society in the educational attack against cancer; also cooperated with the State

Board of Health in having various persons who were recorded as contacts examined for tuberculosis.

We have an interprofessional organization which meets every three months. We have had splendid programs with outstanding speakers from various educational institutions who are authorities on their subject. These meetings are very often held in connection with the Linne Society, which is sponsored by the Biological Department of Luther College.

Our county society has been holding its regular meeting every three months, being entertained in rotation by the physicians in their homes.

Arthur F. Fritchen, Deputy Councilor

Second Councilor District

The following reports from counties in the second councilor district are hereby respectfully submitted.

C. H. Cretzmeyer, Councilor

Butler County. Butler county has eleven paid members in its medical society. Four other doctors in the county are eligible, but are non-members. Three new members were gained by new men locating in the county during the past year and two members were lost through death. The society held one business meeting during the past year. We have no interprofessional organization. Medical relief is being carried out under a contract with the Board of Supervisors. No public health programs have been sponsored by the society or physicians. No postgraduate courses were given in the county but several members of our group attended the courses held elsewhere. We have no central town of any size in Butler county and many of us on the border attend meetings outside the county.

Bruce Ensley, Deputy Councilor

Cerro Gordo County. There are forty-eight physicians in Cerro Gordo county, of whom thirty-six are active members of the State Society. Ten are life members and two are ineligible for membership. Medical relief is taken care of by a contract between the county medical society and the county supervisors. This consists of giving a reduction on all fees to indigent patients as follows: We are paid $2.00 for house calls, $1.50 for office calls, and approximately fifty per cent of the standard charges for surgical cases. In regard to postgraduate work we have not had a course in this county for about two years. As to public health programs, we conducted an immunization program during the spring and also the so-called summer roundup. We have cooperated in tuberculin testing and in a baby clinic. There has been little or no activity in interprofessional organization.

Jay E. Houlahan, Deputy Councilor

Franklin County. There are eleven members in our county society. We have lost and gained none. We have only two men in the county who are not members of the county society. We have had two county society meetings. We have the same plan in this county as last year for caring for the indigent. The county makes the heaviest levy allowed legally and the doctors in the county care for the indigent for the assessment made, which pays about twenty-five per cent of the regular fees. We did not have a postgraduate course in our county, but several of our members attended courses outside. We vaccinated all the pupils of grade and high school last year for smallpox. We have a baby clinic at the county fair. We have the Lutheran Hospital staff meetings once a month, which are well attended and attract more interest than the society meetings.

J. C. Powers, Deputy Councilor

Hancock County. We had the same number of physicians as last year. We held school immunization for diphtheria. No postgraduate or refresher courses were held in the county. Our meetings are held in conjunction with Winnebago county.

G. A. Bemis, Deputy Councilor

Humboldt County. Humboldt county this year had a tuberculosis program sponsored by the State Health Department with a visiting nurse contacting all tuberculosis contacts. Tuberculin tests and x-rays were given. Schick tests and diphtheria immunizations were given at Humboldt, Bradgate, Ottosen, Rutland and Thor. No new doctors have moved into the county. Dr. A. D. Miller, not a member of the society, died this past year. Our county medical society has only six members, so that our meetings are not scientific, but only for the purpose of transacting business.

I. T. Schultz, Deputy Councilor

Kossuth County. We have an active membership of fifteen in the county. There are two physicians eligible who do not belong, and another who is ineligible. We have lost one member by death. There have been no new physicians in the county.

For a number of years, the county medical society has cared for the indigent on a reduced fee schedule, approved both by the county medical society and the board of supervisors. It has worked very satisfactorily and we believe our per capita cost of medical care is among the lowest in the state. We did not have a postgraduate course this year. Members attended a refresher course at Clarion and a postgraduate course at Emmetsburg.

The county medical society cooperated and approved the diphtheria immunization program in practically all city schools in the county. Members have assisted in general educational porgrams by addressing several lay groups in the county. We have an interprofessional organization and held one meeting in the last year. We held four or five general meetings during the year. The county medical society cooperated with the Iowa Tuberculosis Association in skin testing and x-raying contacts and suspected cases. It is agreed by members of the society that we have no medical relief problem in the county. We believe that everyone receives adequate medical care at the most reasonable cost possible to the taxpayers. We do not believe this will be possible under cooperative setup.

J. N. Kenefick, Deputy Councilor

Winnebago County. The Hancock-Winnebago Society has added one new member, and lost none. There were three meetings held in the county. No post-

graduate or refresher courses were held in either county. Four or five attended the course at Clarion.

Tom J. Irish, Deputy Councilor

Worth County. Our membership consists of five members. One died during the past year, and one left the county. There have been no refresher courses or postgraduate courses in the county. In conjunction with the women of the Farm Bureau, we immunized practically the entire county against diphtheria and smallpox. The members attend meetings at Mason City.

S. S. Westly, Deputy Councilor

Wright County. We have one hundred per cent membership in the county society. We have a contract with the county for care of the indigent on a fee schedule which is very satisfactory. A refresher course at Clarion in the spring was attended by most of the members. We had a tuberculosis clinic in the county and an immunization program in most schools of the county this fall. No interprofessional meetings were held.

J. R. Christensen, Secretary

Third Councilor District

An inventory of the activities of the third district during the past year shows fine cooperation by all the doctors in organized medicine. Again the district indicated its desire to keep abreast of the advancement of medical science by having two postgraduate courses during October and November; one at Emmetsburg and one at Sheldon. Both courses were well attended and much appreciated.

There are four counties which have a full time public health nurse doing excellent work. The American Society for the Control of Cancer and the Women's Field Army made a fine showing. Mrs. W. Vander Wilt as vice president did a thorough job, and increased the membership one hundred per cent over the previous year. In fact (in spite of the fact that the third district is sparsely settled), it took fourth place in the state.

Dr. C. K. McCarthy of the Tuberculosis Division of the State Department of Health is laying the groundwork for another fact-finding clinic to be held in April in seven of the counties.

I want to express my appreciation of the fine cooperation that was given me by the Deputy Councilors and all others in the district.

F. P. Winkler, Councilor

Clay County. As Deputy Councilor for Clay county I submit the following report for the year 1938:

Seventy per cent of the physicians in the county are affiliated with the State Medical Society. No new members have been added and there has been no loss by removal or death.

Medical relief plan for 1938 was as follows: The physicians of the county entered into a contract with the Board of Supervisors to give medical relief to indigents for the sum of $325, which is pro-rated among signers of the contract, and one-third of the minimum state fee bill for major surgery and fractures. The county supplies insulin, liver extract and serums.

There was no postgraduate work in the county. Two members attended courses given at Storm Lake and Emmetsburg. There was a tuberculin testing-x-ray program conducted by the county medical society under direction of the Iowa Tuberculosis Association. Plans were made in 1938 for a diphtheria immunization program for 1939.

No interprofessional organization has been formed in Clay county.

J. M. Sokol, Deputy Councilor

Emmet County. I am enclosing the annual report of the Emmet County Medical Society for the year 1938.

Our annual election of officers for 1938 took place on December 23, 1937. The following officers were elected: President, Dr. C. E. Birney of Estherville; vice president, Dr. Smith C. Kirkegaard of Ringsted; secretary and treasurer, Dr. M. T. Morton of Estherville. Dr. O. H. Miller was elected state delegate and Dr. E. E. Lashbrook was elected alternate delegate. It was decided at the same meeting to invite the Iowa Tuberculosis Association to carry on a program of case finding in the county. This was done during the summer.

There were four scientific meetings held in Emmet county, the local members putting on the programs. The rest of the meetings were held at Spirit Lake in agreement with the Dickinson County Medical Society that we alternate every other month. All the meetings were scientific. On two occasions we had outside speakers.

We lost one member through the death of Dr. W. E. Bradley, who was the oldest practitioner in the county. Two other young physicians, Dr. G. B. Johnston and Dr. L. E. Collins, prospective members, have made application for membership, their applications being now in the hands of the censors, and will probably be elected as members at the next regular meeting.

No program has been initiated for the coming year, nor has it been discussed.

A new arrangement has been made in that the doctors now are on a separate budget for care of the county poor. The Board of Supervisors allowed only $3,500 to cover all medical care. A committee was appointed by the president to see that county cases are not overhospitalized and so prevent abuse of funds provided for the hospital budget.

The above is a report of those activities entered into for the year 1938, and ensuing year of 1939.

M. T. Morton, Deputy Councilor

Lyon County. The Lyon County Medical Society met monthly during 1938 except during the summer months. Scientific and economic subjects were discussed at the meetings.

During the year we lost one member through removal and gained one. Only one eligible physician in the county has failed to join.

The method of caring for the indigent remained

unchanged in 1938. It is satisfactory both to the medical profession and the patients.

The members of the society donated their services for Schick testing clinics in various parts of the county, and did much immunization work.

L. L. Corcoran, Deputy Councilor

O'Brien County. The O'Brien County Medical Society had three meetings in 1938. The society lost one member by death, Dr. H. J. Brackney of Sheldon. Dr. R. L. Irwin, another member, moved from Paullina to Iowa City. Dr. S. T. Moen located at Hartley and is a new member. A postgraduate course was given at Sheldon and was well attended by members of the profession of northwest Iowa. The lectures were given by eminent men of the country, and were received with a high degree of satisfaction and benefit by the profession. The public health nurse, Miss Laura Sabroe, was rehired and has done much creditable work in the county. "The Follow-up Tuberculosis Program" by Dr. McCarthy and staff of Des Moines has been arranged for the year 1939. New officers for 1939 are: Dr. G. C. Oldag of Paullina, president; Dr. J. A. Wagner of Primghar, vice president; Dr. W. S. Balkema of Sheldon, secretary; Dr. W. R. Brock of Sheldon, delegate to the Iowa State Medical Society. An interprofessional society has been organized but did nothing in 1938. Medical care of the indigent has been the responsibility of the Board of Supervisors and has been carried out by the physicians in the county with occasional help by the University Hospital at Iowa City.

W. R. Brock, Deputy Councilor

Osceola County. Osceola county had four meetings during the past year. A fine spirit of harmony is prevailing. Public health problems are discussed monthly by the Health Committee.

A county-wide immunization program is outlined for March, at which time every doctor in the county will cooperate with the county health nurse and other health officials to bring about as nearly a complete immunization of all the school children and pre-school children in the county as possible.

A tuberculosis fact-finding clinic will be held in Osceola county in April, conducted by Dr. C. K. McCarthy of the Tuberculosis Division of the Iowa State Department of Health.

Every doctor in the county is a member of organized medicine, and the dues for 1939 are paid. Dr. George S. Kuntz, who has recently become associated with Dr. F. P. Winkler of Sibley, has not as yet presented an application to become a member of the county society.

There have been no deaths in the profession in the past year.

Frank Reinsch, Deputy Councilor

Palo Alto County. There are thirteen doctors in Palo Alto county, all of whom are members of the county medical society. There have been no new members added and no deaths during the past year.

The plan in force for taking care of indigent or low income group in 1938 was the same as has been in force for a number of years; i. e., an adjusted fee schedule for the care of indigent patients has been in operation. The doctors of Palo Alto county feel that by caring for as many of the low income group as possible by adjustment of fees to them personally and an attempt to keep them off the relief rolls, we are continuing the practice of medicine as it should be done in a democracy.

During the months of October and November a postgraduate course was held in the Kermoore Hotel, Emmetsburg. This course was sponsored by the medical societies of Clay, Dickinson, Emmet and Palo Alto counties and was attended by doctors from Kossuth and Pocahontas counties as well. This course was one of those arranged by the Speakers Bureau of the State Medical Society. Dr. J. B. Knipe of Armstrong and Dr. F. X. Cretzmeyer of Emmetsburg were the local organizers of the course. Several of the doctors of our county society also attended other courses of instruction; one of the doctors attended the alumni clinics at the University of Iowa, one the Center for the Continuation of Study, University of Minnesota, and two of the doctors attended the International Medical Assembly at Philadelphia.

Our county medical society also took part in the summer round-up examinations, cooperating with the Farm Bureau in examining 4-H girls and boys. Immunization of school children for diphtheria has been carried out in several of the towns of the county by members of our society. In cooperation with various lay groups which furnished hospitalization, members of our society removed tonsils from a number of school children from indigent homes. Several of the members have given talks before Parent-Teachers' Associations, Women's Clubs, Rotary Clubs and other lay groups.

Previous to the general election in November, the Palo Alto County Medical Society took an active part in promoting a public county hospital for Palo Alto county. The proposition lost, lacking three per cent of the required sixty per cent majority. The present hospital accommodations of the Palo Alto hospital, a community project, are inadequate. There is a glaring need for more hospital space in Palo Alto county.

Seven meetings of our society have been held during the past year.

Officers elected for the ensuing year are: President, R. J. Brink, Ayrshire; vice president, J. P. McManus, Graettinger; secretary-treasurer, Paul O. Nelson, Emmetsburg; delegate, H. R. Powers, Emmetsburg; alternate delegate, George H. Keeney, Mallard.

Harold L. Brereton, Deputy Councilor

Pocahontas County. Pocahontas county had ten paid and one life members in 1938, out of a possible eighteen members. We lost two members through death, and two new physicians located in the county. The society had twelve meetings during the year, at which scientific subjects were discussed. These meetings are attended by fifteen or twenty per cent of the membership. About ten of our members attended postgraduate courses held elsewhere. The care of the indigent is done under a contract with the Board

of Supervisors, the same as in 1935, 1936 and 1937. We have an active interprofessional organization.

J. H. Hovenden, Deputy Councilor

Sioux County. Sioux County had fourteen members in good standing in 1938, and four delinquent members. Two were lost by death. During the year the county society conducted a smallpox vaccination campaign, during which 832 vaccinations were made. A group audiometer test was given in Boyden, at which six per cent of the persons were found to have defective hearing, and were reported to physicians for follow-up treatment. A pre-school round-up campaign brought in many children for examination and immunizations.

The society approved the establishment of Red Cross first aid stations, the placing of first aid kits in all rural schools, a survey on smallpox to be conducted by the Farm Bureau and other organizations, and a meeting to be sponsored by the National Social Hygiene Committee.

Various members of the society spoke on health subjects before lay groups.

John G. DeBey, Deputy Councilor

Fourth Councilor District

Buena Vista County. Membership for 1938 totaled seventeen out of nineteen physicians in the county. One new member entered and one member was lost by removal. One physician in the county was not very active and therefore not a member.

Our medical relief setup is based on a fee schedule. For the last eight or nine years we have had an agreement with the Board of Supervisors whereby the low income group is taken care of by a schedule of fees agreed to between the doctors and the board. It is working very satisfactorily to all concerned.

No postgraduate course was held in our county, but we did have a very good refresher course. Physicians from surrounding counties attended. Average attendance was about twenty to twenty-five.

Two or three public health programs were held in the county during the year. Several of our members appeared at various gatherings and gave talks on health. We held no child health clinics, but our county did cooperate in the district orthopedic clinic held at Cherokee.

Buena Vista county is a member of the Tri-County Interprofessional Organization which was the second to be formed in the state. It was organized some two years ago but has been inactive up until last fall. Now it is active and entering into its work.

H. E. Farnsworth, Deputy Councilor

Carroll County. Carroll county held two meetings in 1938, one scientific and one devoted to a discussion of the care of the indigent. Over ninety per cent of the physicians in the county are members of the society. We lost one member by death during the year, and took in one new member.

Our physicians cooperated in a postgraduate course in other counties during the year. We have no interprofessional organization. We held no child health clinics during the year, but plan to hold an orthopedic clinic in the spring of 1939.

Our contract for the care of the indigent is unsatisfactory, and we hope to get it changed in 1939.

W. L. McConkie, Deputy Councilor

Crawford County. Crawford county lost one member by transfer during 1938, but gained one new member and reinstated two eligible non-members. That leaves only one physician in the county who is not a member, and we shall try to enroll him during 1939.

Our medical relief setup during 1938 was about the most unsatisfactory we have ever had. We have not been able to make definite arrangements with the Board of Supervisors, and they pay us whatever they want to pay. Practically every member of the society is much dissatisfied.

We had no postgraduate course during the year, but we had some very interesting scientific programs. Many of our members attended postgraduate courses at other places.

The usual immunization in the schools has been carried out, but there have been no clinics of any sort. Several members of the society have addressed clubs and societies on various subjects.

Our interprofessional association is not functioning actively. We are making plans for a good program for 1939, and are looking forward to a good year.

C. L. Sievers, Deputy Councilor

Ida County. One hundred per cent of the physicians practicing in Ida county were members of the society during 1938. We lost one member by removal during the year.

Care of the indigent is under an informal agreement with the Board of Supervisors. The physicians render individual bills for work done on authorization of the social worker, with uniform discounts made to the county. The plan is the same as that followed in past years, and is satisfactory.

We had no postgraduate course in 1938, but members of the society attended courses held elsewhere. We carried on diphtheria immunization in the schools as we have done in the past. All physicians in the district divide a small fee for the service.

Our interprofessional organization is not functioning, but we are taking steps toward making it active again.

E. S. Parker, Deputy Councilor

Plymouth County. The Plymouth County Medical Society had twelve paid members out of a possible twenty-two in 1938. We lost one member by removal, and gained one.

Our present plan for care of the indigent has been in force three years. The county is divided into six districts. Physicians in each district have separate but similar contracts with county supervisors. Sixteen doctors in all share in the contracts. Funds are divided equally among physicians in each district. The patient may consult any physician in his district. Eight Le Mars physicians were paid $3,200 per year to care for the Le Mars district, plus care of jail and county home patients. They also agreed to do

surgery, x-ray, etc., for the entire county if patients are sent to the hospital. The total contract for the county was $6,400.

The indigent patient is required to obtain a slip from the welfare office each month. In an emergency he may obtain a slip after receiving medical care. Out of town patients obtain their slip by mail. The plan in force is very satisfactory. The welfare office decides who is medically indigent. There has been no complaint from the physicians, and in 1938 the welfare office did not have a single complaint from patients as to service rendered by the physicians. The records show that physicians were paid from thirty to forty per cent of their usual charge for care of the low income group.

No postgraduate courses were held in the county in 1938. Two members of the society attended the fall course at Sheldon. About half of the society attends the Woodbury county meetings each month and profits by its fine programs.

In January a smallpox vaccination program was presented, and in November and December a diphtheria immunization program was carried out with good response. The work was done in the office of the family physician, with state vaccine. A charge, usually of fifty cents cash, was made.

Several health talks were made to lay groups. An interprofessional association was organized in 1937, and its annual meeting was held in October. It has twenty-nine members, all active and interested.

W. L. Downing, Deputy Councilor

Sac County. The Sac County Medical Society had a somewhat less active year during 1938 but the meetings held were usually well attended with twelve to fifteen members present.

The men throughout the county have been active members with but one exception. Dr. Eaton left Schaller during July and was succeeded by Dr. Donald Deeters, who had just completed his interneship at Broadlawns Hospital, Des Moines. Dr. Deeters is a graduate of the University of Minnesota Medical School.

The care of the indigent sick has been managed under a quasi-contract plan with the Board of Supervisors. Due to some overpadding of bills and some ruthless cutting of the same, the plan is not meeting with the same degree of satisfaction it did in previous years.

A plan to close all doctors' offices in the county on Thursday afternoons met with almost complete approval and will probably be repeated in some form this next summer.

No county-wide immunization programs were held during the year but in two communities programs were held because Red Cross funds were available to finance the whole program. As a group, the society is not in favor of such programs where rich and poor alike are taken care of at "poor" prices.

Interprofessional organization has not progressed beyond the conversation stage but no doubt an effort will be made the coming spring to effect such an organization.

J. R. Dewey, Deputy Councilor

Woodbury County. Six new members were admitted to the society in 1938. Three members were lost through death, and two moved away. We have six life members.

The society held eight meetings during the year. One was purely social in character; the others were business and scientific. The average attendance was about eighty.

During the year 1,038 smallpox vaccinations and 1,003 diphtheria inoculations were given by the clinic and county nurses.

Peirce D. Knott, Deputy Councilor

Fifth Councilor District

Boone County. Boone county again has one hundred per cent membership. We have a contract for the care of the indigent modeled on the Iowa plan. We cooperated with the schools in giving vaccinations, pre-school and health examination programs. We also helped conduct a tuberculosis survey of all high school students in the county.

During the year the members of the society, individually and collectively, assisted with the work in connection with the hospital campaign. Several meetings were held during the year.

J. O. Ganoe, Deputy Councilor

Calhoun County. One hundred per cent of the practicing physicians in the county are affiliated with the county and state societies. We gained two members during the year, and lost two, one by removal and one by death.

We have a contract with the Board of Supervisors on a fee basis (50 per cent of the minimum fee schedule for private practice in the county). Service is rendered upon authorization from the county relief worker, and bills submitted monthly. These are audited by three physicians appointed by the county society. Our plan has been very satisfactory. We have no plan for care of the low income group, although we have considered one. We may try the FSA plan recommended by the Medical Economics Committee.

We had a postgraduate course of eight lectures given by nationally prominent teachers. Our members participated loyally, and other physicians from surrounding counties also attended. Our members usually attend other postgraduate courses during the year.

We have sponsored Schick testing and diphtheria immunization programs in the schools of the county, have collaborated with the county nursing committee in securing state lecturers, and have given a course of instruction in first aid for the Red Cross.

We have an inactive interprofessional organization.

P. W. Van Metre, Deputy Councilor

Dallas-Guthrie. Regular meetings of the Dallas-Guthrie Medical Society have been held quarterly, with an average attendance of thirty. Four new physicians located in the counties during the last year and all are now affiliated with the society. Our membership totals forty-three. We lost one member by removal, and one, a charter member, by death.

We did not have a postgraduate course this year. We have no interprofessional organization. We car-

ried out an extensive smallpox vaccination campaign.

Dallas county has a contract with the Board of Supervisors for care of the indigent. The plan is working satisfactorily. One physician audits all of the bills before payment is made. Guthrie county has been operating under the IERA plan, but in September it made a contract with the Board of Supervisors. Under this contract, the work is progressing satisfactorily.

E. J. Butterfield, Deputy Councilor
Dallas County
S. J. Brown, Deputy Councilor
Guthrie County

Greene County. We had a membership of twenty-three out of a possible twenty-five physicians in 1938. We gained three members by transfer from other societies, and we lost three members, one by death and two by removal.

The Board of Supervisors hired a physician to care for the indigent in 1938. He was to do all medical and surgical work for the county. Under this plan there was a big reduction in operative and hospital cases; the physician had difficulty in making the rounds of the county, and many complaints developed. Cost to the county for medical care was reduced from about $12,000 to $4,800, but the result was so unsatisfactory that the county has gone back to its old plan for 1939.

We did not have a postgraduate course, but some of our members attended courses elsewhere.

The society helped with the Summer Roundup, immunization programs, examination of 4-H Club boys and girls, and performed some smallpox vaccinations.

Our interprofessional organization is not active.

Ben. C. Hamilton, Jr., Deputy Councilor

Hamilton County. All but one physician in Hamilton county was affiliated with the society in 1938. One doctor left the county, and four new ones located in the county. At present we have twenty-one physicians practicing here.

We have a contract with the Board of Supervisors for care of the indigent. We are paid $4,800 per year, but the plan does not work out very well, and we are trying to persuade the supervisors to adopt the Wright county plan.

We had no postgraduate course, and no public health program. Our interprofessional organization is fairly active.

M. B. Galloway, Deputy Councilor

Polk County. Activities of the Polk County Medical Society were extended during the year 1938. The following report is a resumé of the more important activities.

Membership: Sixteen new physicians entered practice. We gained fourteen new members and reinstated four. Seven members were lost, four by death, one by transfer, and two by failure to pay dues. Total membership was two hundred fifty-five, including twenty-three associate and non-resident members.

We held twelve meetings during the year, eight with scientific programs, two special meetings to discuss medical economic subjects, one to discuss the syphilis program, and the annual meeting. Sixteen members and one guest speaker were on the programs.

There was no change in our medical relief plans. The Medicodental Bureau handled one hundred forty cases, remitting to doctors, dentists and hospitals approximately $5,000. Hospital care for the indigent is provided at Broadlawns. Home care is provided by county physicians under a contract with the Board of Supervisors. The commitment board examined eight hundred thirty-nine applicants for medical care at Iowa City; approximately four hundred fifty were committed. Attempts to obtain a county contract for the care of the indigent were again unsuccessful.

Three hundred and eighty-one children were examined by private physicians or at the Health Center in the Summer Roundup campaign. Approximately twelve hundred immunizations were given by private physicians and city and health departments in the fourth annual diphtheria immunization campaign; approximately six hundred were vaccinated against smallpox in this campaign. Twenty-six Christmas Seal clinics were held at Broadlawns Tuberculosis Hospital at which one hundred and fifty-nine low income possible tuberculosis patients not eligible for free care were tested and examined. The society endorsed a tuberculosis survey and testing program in the schools. A committee from the society which acts in an advisory capacity to the Des Moines public forums brought C. Rufus Rorem, M.D., and W. W. Bauer, M.D., to Des Moines for public addresses. Pros and cons of the proposed National Health program were discussed at two open meetings of civic organizations and in one senior high school.

A Society Interne Committee, in cooperation with the hospitals, established a rotating interne service between private and charity hospitals. This committee also established a central teaching clinic meeting one hour each week, attended by all internes and many members. The teaching staff is selected from the society membership.

A Medical Business Bureau, under the control of the Medicodental Bureau Committee, serviced delinquent accounts of many members, collecting for them a net of more than $23,000. The method of collecting on compensable cases at Broadlawns was improved.

Cooperation in the survey on medical care was very good except for physicians and dentists, about twenty-five per cent of whom cooperated. The survey is almost completed.

The executive office continues to serve as an information bureau to the laity, correlate the activities of the society, publish a monthly bulletin, manage the Medicodental Bureau, and otherwise to serve the society and the public according to the demand.

James A. Downing, Deputy Councilor

Story County. Nineteen thirty-eight saw the medical profession feeling the pressure of the forces behind the drive for socialized medicine. Our attention was drawn to this by a special meeting held during the summer, at which time the survey on medical care was explained, and later at a special meeting of the House of Delegates when the National Health Con-

ference and the proposed health program were explained.

Story county had one hundred per cent membership for 1938. We gained three new members. Two scientific programs were given during the year, and we carried on vaccination and immunization work over the county. We cared for the indigent under the same type of plan as we have had for several years. Our interprofessional association has been organized, but is not active.

Bush Houston, Deputy Councilor

Sixth Councilor District

A general survey of the sixth district impresses one with the fact that most of the physicians are functioning well in their professional and personal affairs, but are not adequately interested in organized medicine and in civic affairs.

Meetings have been fairly well attended when baited with good speakers and good entertainment or food. Memberships have kept up and good interprofessional groups have been formed.

Indigent and near-indigent have been well cared for. Health programs have been well conducted where properly organized.

Largely due to uncertain federal health activities, the American Medical Association survey has not been as complete in this district as it should have been, but still presents a more fair picture than most of the federal and sociological surveys along the same line.

I wish to thank the Deputy Councilors for the following reports:

C. W. Ellyson, Councilor

Benton County. Benton county had eighteen members last year in the county and state societies and two life members, making twenty members, the most we have had for many years. We enrolled two new members last year and lost none by death or removal.

The physicians at Belle Plaine and Vinton have had a contract with the Board of Supervisors for the care of indigents which has been satisfactory. The rest of the county works on a reduced fee basis.

We had no postgraduate course in our county, but several physicians attended courses in adjoining counties.

We had no public health programs in the county last year, but there are plans in the making for immunization programs in 1939. We have no interprofessional organization in this county.

We have but one or two meetings each year, but are fortunate in having good county societies on two sides of us which are well attended by our members.

G. R. Woodhouse, Secretary

Black Hawk County. Membership: We now have a membership of sixty-six with three eligible nonmembers in the county. There were five new members taken in during the year and we lost two by death, namely, Dr. T. U. McManus and Dr. J. E. Brinkman.

Medical Relief Setup: We have a medical relief plan now operating successfully and satisfactorily for five years. The work is done on order of the overseer of the poor by members of the county medical society, three or four serving each month. The society is paid per piece for this work. At the end of the year, after expenses are paid, the remainder of the money is divided among the members.

Postgraduate Work: We had no organized postgraduate courses during 1938 but at our regular scientific meetings we had speakers of national reputation.

Public Health Program: We had a diphtheria immunization program which was in part satisfactory, and a few radio broadcasts.

Interprofessional Organizations: We have such an organization which promised to be active, although with the death of Dr. Brinkman, who was president, it has been somewhat interrupted. We expect it to be revived soon.

A. J. Joynt, Deputy Councilor

Hardin County. Membership: All physicians of the county, twenty-five in number, are affiliated with the county, state and national society. We had no new members, and no loss by death.

Medical Relief Setup: We have again renewed our contract for the indigent poor at the same stated price as in 1938. Our society is of the opinion that we have a very satisfactory plan, which is working well.

Postgraduate Work: Our society meets every month and we have outside speakers part of the time, with our own members also contributing.

Public Health Program: Individual physicians are responding to the immunization program and 4-H Club work.

We do not have an interprofessional organization.

E. O. Koeneman, Deputy Councilor

Jasper County. The society continued, with a few minor changes, their medical relief contract with the Board of Supervisors for the care of the indigent. This contract provides that the patient may choose any member of the society practicing in his vicinity; and in the event the indigent patient has no choice, the physician shall be chosen in alphabetical rotation from the physicians in the locality. The county society selects committees to advise the board on all cases for hospitalization, surgery, or prolonged cases wherein socialistic treatment is being instituted, and the reference of such cases to local or state hospitals. The county society also advises and assists the Board of Supervisors in auditing medical bills. These committees have been of great assistance to both parties of the contract, and have prevented many possible misunderstandings. The medical fees are based upon a charge of 50 per cent of the fee bill of the Iowa State Medical Society. This plan has been satisfactory to both parties for several years.

There were thirty-one physicians eligible for membership in 1938 in Jasper County Society, and with only four exceptions, all were members. During this year, one member retired from practice; one removed from the county, and three new physicians began practice here.

The Jasper County Medical Society sponsored a health program for the members of the 4-H Club,

and also sponsored a highly successful general immunization program for smallpox and diphtheria.

During 1938, an interprofessional organization was formed in Jasper county. The year's activities were climaxed with an interesting program and banquet held in December at the Maytag Hotel in Newton.

Harry P. Engle, Deputy Councilor

Marshall County. We enrolled two new members, Dr. M. G. Reed of Melbourne, and Dr. Russell Wolfe of Montreal, Canada. The county has one ineligible non-member. There were no deaths. The two new members were taken in late in the year and dues for state society will be included in our county remittance in order to make us one hundred per cent in membership.

Medical Relief Setup for 1938: We had a flat rate contract with the Board of Supervisors in the sum of $9,000. A medical order is issued by the relief office to the doctor of the patient's choice. The order is filed with the secretary of the society with bill for same at monthly intervals. Payments are made to doctors at quarterly intervals on the basis of amount of work done. The plan has been fairly satisfactory, chief complaint being that the contract price has been about thirty-three and one-third per cent too low.

Postgraduate work: With the cooperation of the Speakers Bureau we presented a planned series of monthly programs with speakers of known repute. Invitations to attend were sent to doctors in Hardin, Tama, Grundy and Poweshiek counties.

Public health programs: Immunizations against smallpox and diphtheria were carried out by the city physicians in Marshalltown for the indigent sick. Material was furnished to private doctors through the city physician's office and indigents were allowed choice of physicians. Several members of the society spoke over the radio and before various groups on health subjects.

Our interprofessional organization is active. A meeting was held October 4, 1938, at which Dr. Adson of the Mayo Clinic spoke.

Rodney C. Wells, Secretary

Poweshiek County. The society wound up the year with a membership of twenty-two; inactive memberships, none; life members, eight.

Our annual contract with the board of supervisors remains in force and is working satisfactorily for care of medical indigents. Work has been very light the past three months among the poor. We have a fee bill in our contract, the society being incorporated. An auditing committee passes on the bills each month.

We had a postgraduate "refresher" course last spring. It was very greatly appreciated. We believe the list of subjects should be enlarged for such courses as our membership is too small to arrange for a postgraduate course.

The only public health program was cooperation with the State Department of Health on a tuberculosis survey in this county. Individual physicians in Grinnell take part in free examinations in Grinnell College and the Grinnell schools.

The interprofessional group is not active. We apparently do not need it as we have sent to the legislature two men who will, we believe, be fair to organized medicine.

Poweshiek county's part in the survey of medical care has been practically a complete failure. We are not proud of this but think that the facts should be stated.

Clinton E. Harris, Deputy Councilor

Tama County. The per cent of physicians actively identified with the society is one hundred per cent. Two new members were added and three lost; two by removal, and one by death. The total membership in the society on January 1, 1939, is twenty-three.

Medical Relief Setup: Our contract with the Board of Supervisors is for $5,000 per year, and a contract for the soldiers' relief is on the same basis as medical relief. Bills are audited by a board of censors from the medical society, prorated to each member according to his bills. This applies both to indigent and soldiers' relief.

Postgraduate work: Several of our members attended Marshall and Black Hawk county programs.

Public health program: We have a full time county nurse sponsored by the county society and other organizations, affiliated with the district organization. The nurse is paid half by the county and half by the state.

We have no interprofessional organization. Several attempts have been made to organize one, but other groups do not seem to be interested.

Other activities: The Medical Society sponsored a public hospital, but was beaten at the polls. Nearness of hospitals in surrounding counties, most doctors being connected with them, and cost to the taxpayers, were the main factors in our defeat.

A. A. Pace, Deputy Councilor

Seventh Councilor District

The appended reports of the deputy councilors of the Seventh District indicate that each of the county societies has been active in developing the scientific aspects of medicine.

The care of indigents and medical indigents has definitely improved and all the societies are fairly well satisfied. In Dubuque County, after a trial period which proved satisfactory to the medical profession and Board of Supervisors, a contract was approved for the coming year. The plan, which is somewhat similar to that of Linn County, has been successful because of the fine cooperation between the relief authorities, Board of Supervisors, the local hospitals and the medical society. This cooperative spirit, previously somewhat lacking, has been brought about through the efforts of the medical director, Dr. W. A. Henneger.

All societies were active in the diphtheria immunization programs and in some of the counties the anti-

tuberculosis programs were also carried out. The cancer educational program was also vigorously conducted in practically all counties. Many physicians in the district have reported a distinct tendency of patients, especially women, to seek earlier medical advice in regard to symptoms suggestive of cancer. It is imperative that the medical profession respond wholeheartedly to this stimulus by complete and thorough examinations, otherwise the good that might result from an early diagnosis of cancer or the correction of a pre-cancerous lesion will be nullified and the effect of the educational program lost.

The Dubuque County Interprofessional Society was quite active during the year and had two public meetings, one with an attendance of seventy-five and another with three hundred. A postgraduate course held in Dubuque was especially notable for the high grade lectures given by each doctor. It is to be regretted that only forty physicians attended. Certainly no practitioner within a reasonable distance of Dubuque could have failed to receive far more in worthwhile medical knowledge from this than he could have obtained by any other method. The Speakers Bureau can only offer the best speakers possible. To make the postgraduate work attain its objective—that of elevating the standard of medical practice in Iowa—it is essential that every practitioner make every effort to take advantage of the offer.

In conclusion I again wish to express my deep appreciation for the aid given me in fulfilling the duties related to the State Society by the officers of the several county societies, the deputy councilors, cancer chairman, and by the rank and file of the profession. Their interest in the problems and functions of the profession and evident desire to carry on have been a potent stimulus.

F. P. McNamara, Councilor

Buchanan County. Following is the report of the Buchanan County Medical Society for 1938. We have eighteen members, three of whom are on the staff of the State Hospital. Four of the members of the State Hospital staff, one recent and one older doctor in the county, are not members of the society.

Our medical relief work is done under a fee bill arranged with the Board of Supervisors. Cases are handled through the relief office. Those needing hospital care either are taken care of at our local hospital, or sent to Iowa City if necessary. The local hospital has a separate agreement with the Board of Supervisors. Twenty per cent of all hospital days were for indigent cases. Our arrangement has been very satisfactory.

No postgraduate course was held in this county. One of our members attended a course for pneumococcus typing.

Through schools, and in doctors' offices, over five hundred pupils were immunized against diphtheria by injection of toxoid supplied by the State Department of Health. At the present time over ninety per cent of the pupils of the Independence schools have been treated.

C. W. Tidball, Deputy Councilor

Cedar County. Following is the report of the Cedar County Medical Society for 1938.

Membership: All members are active or at least participating. Two new members were added during the year. Three of the older members have passed over the "Great Divide."

Medical relief: The medical care of indigent patients is satisfactorily managed through a very efficient relief office supervisor and the fine cooperation of all physicians.

Postgraduate work: We held no postgraduate courses and only one meeting was held during the year.

Public health: There is no interprofessional society and no child health clinics were held. The pupils at Tipton Consolidated School were immunized against diphtheria.

E. J. Van Metre, Deputy Councilor

Clinton County. There are fifty-one physicians in Clinton County; forty-two members are paid up and belong to the Clinton County Medical Society. We have one life member; two doctors not in active practice; four who are not members; and two who are ineligible. We have had one new member admitted during the year, and one death.

Medical relief setup: We had no contract between February and May, and finally the relief authorities at Des Moines approved a contract allowing $13,000 instead of $16,000 as paid the year before. Consequently we can pay the doctors only a very minimum sum. I judge practically half of our work with relief patients and half of the hospitalization is due to old age pensioners. We hope that during the new year we will have a more practical fee schedule.

We did not have a postgraduate course in 1938, although we have had one for the three years just preceding.

We immunized the school children in Clinton against diphtheria last winter, and in the county immunized them against diphtheria and vaccinated for smallpox. Various doctors gave a number of talks on the cancer problem. We also formed an interprofessional organization, but so far the organization has not been active.

Ralph F. Luse, Deputy Councilor

Delaware County. Fifty per cent of the physicians in Delaware County were actively affiliated with the State Society in 1938.

Our Society still adheres to a contract with our Board of Supervisors for taking care of our indigent sick. This contract was altered a little in 1938, resulting in slightly lower fees. Despite this fact, the county spent twice as much as the previous year for medical aid, with an increase of ten per cent in the number of indigents; however, we received no state help in caring for them.

We immunized the school children in Delaware County against smallpox and diphtheria last fall. Seven hundred ninety were vaccinated for smallpox and nine hundred ninety inoculated against diphtheria, out of a possible four thousand five hundred school children.

The cancer educational program was continued under the direction of the Women's Field Army. We gave numerous lectures throughout the county and obtained sixty-two enlistments.

An interprofessional society was organized in January, 1938, which was the only meeting during the year.

Though our County Medical Society held few meetings in 1938, we feel that we had a progressive year.

J. I. Jones, Deputy Councilor

Dubuque County. As deputy councilor of the Dubuque County Medical Society, I wish to submit the following report concerning the activities of this society for the year 1938.

Membership: During the year 1938 there were sixty-eight physicians in Dubuque actively affiliated with the State Medical Society. Two new members were added; one was lost through removal and one elderly physician died.

Meetings: There were seven regular meetings and six special meetings, a special meeting being held in May, two meetings in June, two meetings in July, and one in September. There was one anniversary meeting. The average attendance at regular meetings was twenty-four and one-third. The average attendance at special meetings was twenty-five and five-sixths.

Guests and speakers of the Society were: Dr. C. C. Little, director, American Society for Control of Cancer; Dr. O. R. Hyndman, Iowa City; Dr. Ruben Nomland, Iowa City; Dr. W. A. Thomas, Chicago; Dr. F. R. Peterson, Iowa City; Dr. H. M. Ivins, Cedar Rapids; Dr. T. F. Thornton, Waterloo; Mrs. F. P. G. Lattner, Dubuque; Miss Helen Boice, Dubuque; Dr. John Randall, Iowa City; Dr. R. M. Klemme, St. Louis. Joint meetings were held with the druggists and dentists in March and with the dentists in December.

Medical relief: The plan for medical relief in force at the present time appears to be working very nicely. The service to the indigent or low-income group in Dubuque county is good. The county medical society has given approval to the appointment of seven of its members, appointed by the president of the society, to act as a board of trustees. The contacts of the society with the County Board of Supervisors are made through this board of trustees. The board of trustees has chosen a member of the society, who is also approved by the county supervisors, to supervise the activities relative to the medical care of the low-income group. All medical, hospital and drug bills are directly scrutinized by him. This plan is working very satisfactorily both to the supervisors and to the society, and it has the full cooperation of the members of the Dubuque County Medical Society.

During the year 1938, a postgraduate course was given in Dubuque County by the Speakers Bureau of the State Medical Society. Very excellent programs were offered, and an average of forty physicians were in attendance, practically all of whom were members of the Dubuque County Medical Society.

Immunization: A rather extensive diphtheria immunization program was carried out in Dubuque County in 1938. This in addition to what has already been done has caused a high percentage of the children of school age to be protected against diphtheria.

During the year 1938 the Dubuque County Medical Society and the individual physicians of the society cooperated in the case-finding program carried on by the Iowa Tuberculosis Association and the State Department of Health. The physicians assisted very materially in making this program a success.

Dubuque County has an interprofessional organization. The society and the individual physicians are active both in promoting and carrying on the work of this organization. Several meetings were held and speakers imported for special meetings held by this organization.

Active participation in all medical and public health programs were entered into by the Dubuque County Medical Society as a whole and as individual members. The cancer campaign was carried on with vigor, and fifty lectures, exhibits and radio talks were given in 1938.

J. Carl Painter, Deputy Councilor

Jackson County. The Jackson County Medical Society held its quarterly meetings in 1938, with combined scientific and business programs. One new member was admitted to the society and no members were lost. One member, Dr. J. C. Dennison of Bellevue, will complete his half century mark in the practice of medicine this year. We are all proud to congratulate him. He has been an honorable, ethical member of our society, always upholding the best traditions of the profession.

There have been immunization campaigns or clinics held this year. Care of the indigent has been done under a modified Emergency Relief Administration plan. We have an agreement with the County Board of Supervisors. They accept our bills after they are audited by a committee from the medical society. These bills are fifty per cent of the usual fee.

George C. Ryan, Deputy Councilor

Jones County. The Jones County Medical Society membership remains the same as during 1937. We have no plan for taking care of the low income group except through the Jones county relief office. The plan followed by this office is similar to the original Emergency Relief Administration plan, except that three members of the county medical society audit the bills presented monthly with the understanding that there shall be no cut in the bills other than as made by it.

There has been no postgraduate work in our county during the past year. We hold a yearly tonsil clinic for those in the low income group. We have no interprofessional organization. Because of the fine scientific programs held in Dubuque and Cedar Rapids, we find it more convenient to attend these than to hold meetings in our own society.

T. M. Redmond, Deputy Councilor

Johnson County. The following report of the membership and activities of the Johnson County Medical Society is furnished through the courtesy of the secretary, W. M. Fowler.

Nine meetings were held during the past year, eight of which included a scientific program. The annual picnic was held at the home of Dr. and Mrs. G. C. Albright. Dr. J. H. Peck and the State Board of Control were hosts at the November meeting; and Mr. R. E. Neff and the University Hospitals were hosts at the May meeting. The average attendance for the year was one hundred eight. The largest attendance was one hundred thirty-nine at Oakdale.

The society lost sixteen active and associate members by transfer or registration, and thirty junior members by removal. The society admitted two physicians by transfer, six by application, and four by transferral from junior membership. The society admitted twenty-nine junior members by application. The summary of the present membership is as follows: two life members, one hundred seventeen active and associate; eight non-resident; two affiliate; sixty-four junior members; making a total of one hundred ninety-three.

The most noteworthy feature of the society continues to be the excellent interest of the younger men, internes, residents and associates from the University Hospitals. The society feels that it has an unique opportunity and obligation in interesting these men in the work of the organized profession. How well the society has discharged that obligation will be decided by the profession outside our own county.

The medical relief setup is the same plan as in force in 1937. It still works very satisfactorily.

No official action has been taken on the Farm Security Administration program. The interprofessional organization has been perfected and the cancer program is being continued along the lines of 1937.

George C. Albright, Deputy Councilor

Linn County. The Linn County Medical Society completed a very successful year in 1938. There were 101 active members, a gain of one over 1937. Two members were lost by death and three by removal. Since the Linn County Medical Society requires one year of practice in the county before acceptance for membership, there are five junior members who will become full members as soon as they have met this requirement. There are two life members and four honorary members. One life member was lost by death. Of the six physicians in the county who are not active members, four are retired.

The medical relief setup is functioning efficiently on the same basis as in the last report. Dr. H. M. Ivins is director of the medical relief setup which operates under a contract between the Linn County Medical Society and the Board of Supervisors. A clinic is maintained in the court house and specific hours are maintained for the different types of work, namely, prenatal care, diabetes, eye, ear, nose and throat, pediatrics, neurology, heart and chest, internal medicine, gynecology, and general. These clinics are staffed by those physicians and surgeons who are particularly interested in the respective branches and are paid at a flat hourly rate. The work outside the clinic is done, insofar as possible, in rotation and is paid for on a unit basis. The venereal clinic is conducted by Dr. E. G. Kieck and its efficiency has been increased this year by better records and a more efficient follow-up system. Considerable new equipment has been added in the clinic during the past year.

There was no formal postgraduate course in Linn county this year. A number of the members attended a course given at Iowa City in March and April. Several members took short postgraduate courses outside the state. One member is taking a year's postgraduate study in the east.

The usual pre-school and well baby clinics were conducted during the year. During late November and December there was an outbreak of fifty-one cases of typhoid fever in Cedar Rapids. The outbreak resulted from a lodge party where food was served which had been contaminated by carriers. The carriers were promptly identified and the public was advised that there was no danger of a general outbreak of typhoid because the food and water supplies were uncontaminated. In spite of publicity, however, there was considerable alarm on the part of the public, and several thousand typhoid vaccinations were given, chiefly by family physicians. The typhoid cases were limited to the membership of the lodge attending the party.

The Linn County Medical Society is not a member of an interprofessional organization.

The scientific program during the year was of high quality and well attended both by our own members and by visitors from outside the county.

B. F. Wolverton, Deputy Councilor

Eighth Councilor District

The year 1938 saw much discussion of socialized medicine. Much of this was beside the point, because the question is not the socialization of medicine, but the attempt to gain political control of an established profession. Much of the discussion and writing has been by persons with an axe to grind, and with an inefficient or distorted conception of the needs for and the application of medical service. We realize that much of this discussion is irrelevant, immaterial and impractical, but they have the public eye and have been capitalized by political forces for their own aggrandizement. The fact that we doctors know what the public needs and what we can do does not seem to count for much. It is going to take more than a little patting ourselves on our backs to prevent this political control. Too many of us are unwilling to recognize that changes do occur, and that it is our duty to see that these changes are evolutionary, not revolutionary. Too few societies have made any attempt to complete the survey on medical care asked for by the House of Delegates of the American Medical Association. If we as individuals and as groups are unwilling to make the effort to

demonstrate the efficiency of medical service, we should not criticize if political control does come.

As councilor, I have for several years tried to make the physicians in my district "see the handwriting on the wall," but I feel I have wasted my time. If the profession will use the knowledge it has, and cooperate with every other member, it will have a voice in its future. If it is inactive and uncooperative, it may be legislated into submission. This will be detrimental, not only to the profession, but to the public as well.

C. A. Boice, Councilor

Des Moines County. The Des Moines County Medical Society held nine regular and five special meetings during 1938. Scientific papers were presented at seven of the meetings by outstanding physicians from without the society. Meetings for the most part were well attended, about eighty per cent of the members being present.

We had thirty-seven members during 1938, of whom six were life members. We gained two members by transfer, and lost one by removal.

G. D. Jenkins, Deputy Councilor

Henry County. The Henry County Medical Society held six meetings during the year, and also entertained the Tri-County Society on January 28. All active physicians in the county are members of the county medical society.

Ten of our members attended the special clinics held at Iowa City during the spring.

Our contract with the Board of Supervisors for care of the indigent has been carried on from year to year and is entirely satisfactory.

S. W. Huston, Deputy Councilor

Jefferson County. We added one new physician to our membership during 1938, and lost none by death or removal. We have sixteen active members, and two life members, with only one eligible physician in the county not belonging to the society.

Meetings have been held every other month, and have been well attended, with good programs. Excellent staff meetings are held the first of each month at the Jefferson County Hospital, at which time interesting cases are reviewed in round table discussion.

The county society has a contract with the Board of Supervisors for care of the indigent, based on fifty per cent of the county fee schedule. Each doctor serves by the month in rotation. This plan has been in effect a number of years, and is very satisfactory both to the county medical society and the Board of Supervisors.

Ira Nelson Crow, Deputy Councilor

Lee County. During 1938 the Lee County Medical Society met four times, twice in Keokuk and twice in Fort Madison. There have been no changes in the membership in Upper Lee.

The Board of Supervisors has arranged for medical care of the indigent by a fee schedule, which has been accepted both by Upper and Lower Lee County.

The annual meeting of the Southeastern Medical Society was held in Fort Madison in 1938. During December the county society gave a banquet in honor of Dr. J. M. Casey, who had completed fifty years in the practice of medicine.

R. L. Feightner, Deputy Councilor

Louisa County. During 1938 the Louisa County Medical Society had one hundred per cent membership in the county and state societies. We held ten meetings during the year, with an average attendance of seven. Two physicians responded to the survey on medical care. Interest is fairly good.

We have a contract for care of the indigent with the Board of Supervisors. It amounts to about half of the regular fee bill, and the board is reasonable about granting authorizations.

J. H. Chittum, Deputy Councilor

Muscatine County. Muscatine County has twenty out of twenty-three physicians of the county as members, for a percentage of around eighty-nine. We held four scientific and seven business meetings during the year, with very good interest shown. An average of sixteen physicians attended the meetings.

Our contract with the Board of Supervisors for care of the indigent is modeled on the state plan. Each individual physician is paid in proportion to the work he does for the indigent.

The survey on medical care has not been carried out in this county. Blanks were distributed as requested, but were not returned by the physicians. It was the feeling that the blanks called for information which could not be ascertained except by prolonged search through the books of each physician, which would be too arduous.

T. F. Beveridge, Deputy Councilor

Scott County. The Scott County Medical Society had ninety-one members during 1938. Six new physicians were admitted to membership, and three were lost by death. Ten regular and three special meetings were held during the year, with an average attendance of over fifty. Dr. Henry A. Meyers, who acted as secretary of the society for ten years, was presented with a gold watch upon his retirement from office.

A. P. Donohoe, Deputy Councilor

Van Buren County. The membership in our county society remains the same as in previous years, with no deaths and no newcomers. One of our charter members will be inactive for a time because of a fractured hip.

No regular meetings were held during the year, but special meetings were held on call by the president. The society held its second tuberculosis clinic in January, x-raying about fifty persons.

Our medical relief follows the state plan, and is much the same as it has been in previous years. It seems to be the best plan we can obtain.

The society went on record as desiring a fee for 4-H Club examinations.

C. R. Russell, Deputy Councilor

Washington County. The Washington County Medical Society held eight meetings during the year. During March and April the county suspended its

own meetings and attended the University clinics at Iowa City in a body, one hundred per cent strong. The society is cooperating with the Board of Trustees of the county hospital to buy a moving picture projector, so that we may have it for use at our meetings during 1939.

We gained two members who located in the county during the year, and lost three by removal. A third physician who located in the county has not yet applied for membership. We lost one physician by death.

Every member of the society completed the blanks on the survey of medical care, as requested by the American Medical Association. This did not prove to be an arduous task, and the report when completed was so complete that it was published in the Journal of the American Medical Association, November 12, 1938.

E. E. Stutsman, Deputy Councilor

Ninth Councilor District

The county societies of this district have shown a most commendable interest during the past year, although there are one or two of them who still have affairs which would come under the classification of "unfinished business."

The zeal and interest of the deputy councilors have made it possible for the councilor to perform his duties with a minimum of inconvenience. The reports of these deputies are appended hereto and give a concise and clear picture of the condition of the affairs of organized medicine in this district. The report of the councilor would be incomplete without an expression of thanks for the cooperation of this group of men during the past year.

H. A. Spilman, Councilor

Appanoose County. The Appanoose County Medical Society held seven meetings during the year. We have a contract with the Board of Supervisors for care of the indigent, but compensation is made from state funds.

During the year we carried on a program of immunization for school children, and approved a tuberculosis campaign for the near future. Eleven out of thirteen physicians are members of the society.

C. S. Hickman, Deputy Councilor

Davis County. The Davis County Medical Society has one hundred per cent membership in the county and state societies. We lost two members by death during the year.

Care of the indigent is by contract with the Board of Supervisors, on a plan similar to the IERA plan. It is very satisfactory.

We had no postgraduate course in the county during the year. We carried out a tuberculosis program, and did some diphtheria immunization work. Our society has no interprofessional organization, but is represented in the Ottumwa group.

H. C. Young, Deputy Councilor

Keokuk County. Seventy per cent of the physicians in this county are affiliated with the State Society. We had no new members during the year, and lost none by death or removal.

We had no postgraduate course during the year, and did not sponsor any public health program. We have no interprofessional organization.

The same plan for medical care of indigent patients was carried out in 1938 as has been followed in this county for many years. It is simple and should appeal to any hard-headed taxpayer. The medical care of the indigent is considered the same as any other commodity—something to be purchased with the least possible outlay of funds. With this in view, the county is divided into districts, and the medical care of the indigent of each district is let to the lowest bidder. Under this plan a man who is destitute has no voice in the selection of a physician for his sick wife or child. The County Board of Supervisors cheerfully shoulders a responsibility from which angels would shrink.

C. L. Heald, Deputy Councilor

Lucas County. In 1938 all physicians of Lucas county except one were affiliated with the county and state medical societies. There was no loss by removal or death. One new physician located here and became a member.

During the first nine months of 1938 the IERA plan for care of the indigent was in effect. For the last three months the burden was carried by Lucas county. Neither plan was entirely satisfactory, but the present one should work better with the amount per case raised as it is at the present time. We are once more receiving state funds.

A "refresher course," consisting of eight two-hour lectures presented weekly, was held in Chariton. All members of Lucas county society joined the course. Physicians from Wayne, Marion, Monroe and Warren also attended and found it very satisfactory. One member of Lucas county attended the annual fracture clinic at Des Moines, October 20, 1938. The deputy councilor attended the meeting of the eighth and ninth councilor districts at Fairfield, August 17, 1938, when the survey on medical care was discussed. Meetings of the county society were held regularly each month and the attendance was about ninety per cent.

A tuberculosis clinic was held in Lucas county and several members of the society assisted in the tuberculin testing.

There is no interprofessional organization in Lucas county.

R. C. Gutch, Deputy Councilor

Mahaska County. Ninety per cent of our membership is actively affiliated with the State Society. I am glad to report that financial difficulties are all that keep the other ten per cent from being members. Feeling in the county is good; the members feel the worth of organized medicine; and there is a good spirit of cooperation.

Care of the indigent is being carried on under a remnant of the old IERA plan. The members are cooperating nicely, but we do not feel that the plan is satisfactory or adequate as yet.

We did not sponsor a postgraduate course this year. We did sponsor a tuberculosis case-finding program, and although complete figures are not yet available, we feel that a worthwhile bit of work has been accomplished.

We are in the process of forming an interprofessional group.

L. F. Catterson, Deputy Councilor

Marion County. The Marion County Medical Society has maintained a ninety-one per cent membership for the year 1938. Two new members have been added to our roster while one member has been lost through death.

Medical care has been rendered the indigent under the old Federal Emergency Relief plan. All save two of our members have signed up for this service. On the whole this arrangement is quite satisfactory.

At this time, consideration is being given the Farm Security plan, as outlined by the Medical Economics Committee and now being tried by the Woodbury County Medical Society. The enthusiasm shown as regards this arrangement isn't (as the Englishman would say) "too great."

Marion county has had no postgraduate course, but half of the membership of the society attended the refresher course sponsored by the Lucas County Medical Society and held at Chariton in the autumn of 1938.

Several immunization programs have been sponsored by and participated in by the society during the past year.

To date the society has never had the desire to organize an interprofessional organization. However, we maintain close ties with the veterinarians because the state headquarters of the Iowa State Veterinary Medical Society are located in this county.

The Woman's Auxiliary Health Essay Contest was sponsored locally this past year with great success, due to the efforts of our local auxiliary members. The members of our society feel that this is a most worthwhile project and should be given whole-hearted support in every community.

C. S. Cornell, Deputy Councilor

Monroe County. Our county has a population of about 15,000 persons. There are thirteen physicians in active practice. We have a membership of nine. We enrolled two new members, and had two renewals of membership during the year.

We are working under the IERA setup for the medical care of the indigents. This plan is working much more satisfactorily since the allotment per case has been increased. The allotment still does not take care of the regular county case group without a horizontal cut, which was 30.3 per cent for the month of December. We have not adopted the FSA plan for care of that group.

Five of our members attended postgraduate courses held elsewhere. We carried out a program of immunization against diphtheria and smallpox during the year. We have not organized an interprofessional association. We hold quarterly meetings, which are well attended.

T. A. Moran, Deputy Councilor

Wapello County. The Wapello County Medical Society gained three new members in 1938, and lost one by death.

The county employs one physician to care for the indigent in the city of Ottumwa, and other physicians to do the same work in their respective communities. These physicians are all paid a salary, and the plan is working satisfactorily.

We had no postgraduate course during the year, and did not sponsor any public health programs. Our interprofessional organization is active. We have one annual meeting, and other groups are also invited to a combined medical and service club meeting which is held annually.

Edw. B. Hoeven, Deunty Councilor

Wayne County. The Wayne County Medical Society has one hundred per cent membership in the State Society. We lost one member by removal during 1938.

We have, for care of the indigent, a contract with the Board of Supervisors at the old IERA fee schedule. This is generally satisfactory, although the cuts are too great at times.

We held no refresher course in Wayne county, but ninety per cent of our members attended the Chariton course. We sponsored immunization programs in all schools, vaccinations, tuberculin tests, and we held one tuberculosis clinic. General health education is done through the county nurse.

Our county society meets monthly, with almost perfect attendance. Our programs are prepared by local men half of the time, and by outside speakers the other half. We have an interprofessional organization, not very active, and meet twice a year with the dentists.

S. W. Corbin, Deputy Councilor

Tenth Councilor District

Submitted herewith are the reports of my deputy councilors for the past year. The component counties without exception have been very active in prophylactic and general health programs. A refresher course was enjoyed early in the year. Other than that there has been little organized district activity.

The complexity of indigent care has brought about closer cooperation and greater unity among the members of our society. We feel that the year 1938 has been most profitable.

James G. Macrae, Councilor

Adair County. The Adair County Medical Society maintained one hundred per cent membership for 1938, adding one new member and losing none. The society sponsored programs given by its own membership, and nearly all physicians availed themselves of the postgraduate courses given in other parts of the state. Two local public health programs were given, as was a diphtheria immunization program in schools meeting the requirements.

We have made no change in our medical relief setup. It has now continued in force for three years.

It is a contract based on a fee schedule, and is elastic, so that it can be altered even during the contract year. From time to time certain improvements have been made, and it is now the most satisfactory of any plan we have used.

An interprofessional organization has been completed, but so far it has not functioned beyond the original meeting, although there is considerable interest shown in it by the various groups.

A. S. Bowers, Deputy Councilor

Adams County. In making my report for Adams county for the year 1938, I wish to report one hundred per cent of the physicians are affiliated with the State Society. We gained no new members, and lost none during the year.

The medical relief plan in force for taking care of the indigent allows about sixty per cent of the usual rates, and is satisfactory.

We held no postgraduate work in our county, but many of the members attended courses elsewhere. There were no public health programs sponsored by the county society or by individual physicians. We have no interprofessional organization.

W. F. Amdor, Deputy Councilor

Clarke County. Following is a report of the activities of the Clark County Medical Society for 1938:

Membership: All eligible physicians of the county are members of the county medical society.

Medical relief setup: During October our society renewed its contract with the state ERA office whereby the allotment per case was raised.

Postgraduate work: No courses were held in Clarke county during 1938. Several of our members attended courses held elsewhere.

Public health programs: The county society sponsored a whooping cough immunizing campaign, also cooperated in a diphtheria and smallpox immunizing campaign. During the late summer the county society cooperated with the State Department of Health in a tuberculosis case-finding program which was a worthy and successful venture.

No interprofessional organization exists in this county.

H. E. Stroy, Deputy Councilor

Decatur County. The following is the report of the activities of the Decatur County Medical Society.

The medical relief plan which was in effect in 1938 has been very satisfactory. It consists of a fee schedule for specific services. The schedule is from fifty to seventy-five per cent of the regular fee and to date has been adhered to very firmly by the relief committee. A referral for work is sent to the physicians and after the service is performed it is returned to the relief office, and all bills are paid at the end of the month. In case of any conflict the matter is referred to a committee of physicians appointed by the medical society to settle such disputes. The medical society is very much satisfied with the arrangement and I feel that the plan is also agreeable to the relief office.

Of the ten physicians in the county, seven belong to the society. There have been no new members added in the past year, and one removal.

Under the sponsorship of the society there have been immunization programs in several of the schools, consisting of smallpox vaccinations and diphtheria immunization. The medical society examined all of the 4-H Club candidates and some of the members delivered lectures on public health problems to various lay groups in the county. The society has worked in cooperation with the Chariton River Valley Division of the Public Health System and has found the public health program sponsored by the State Department of Health very satisfactory as a whole.

We have had several speakers from out of the county appear on programs, lecturing on surgery, eye injuries, and many other phases of medicine and surgery.

Some members of the society attended a postgraduate course held at Chariton, and also attended clinics and medical meetings that were held in various parts of the country.

The society built a bookcase and installed it in the library of the Decatur County Hospital. It also bought and maintained a subscription to the magazine "Surgery, Gynecology, and Obstetrics", to be left at the hospital for the staff to read.

I feel that the Decatur County Medical Society is to be congratulated on the spirit of well being and cooperation which has been present in the past few years. As a unit it has worked very well with no friction among its members, and while cooperating in all worthwhile enterprises, has maintained a degree of independence.

E. E. Gamet, Deputy Councilor

Madison County. Membership in the Madison County Medical Society remains one hundred per cent. We lost one physician by removal, and gained one.

We care for the indigent and low income group according to the plan of the IERA as set up last November.

Our county society meets each month for dinner and scientific programs. We have sponsored the usual immunization program and child health clinic. We do not have an interprofessional organization. Several of our members attended refresher courses.

C. B. Hickenlooper, Deputy Councilor

Ringgold County. Nineteen thirty-eight was a somewhat inactive year for the Ringgold County Medical Society. Out of a possible nine, we had seven members.

Over the years, when we had a flat contract with the Board of Supervisors for care of the indigent, each member of the society shared equally in it. Under our present system, which is essentially the same as the IERA plan, some members have fewer authorizations than others, get less money, and are not content. However, all things considered, the present plan is probably as satisfactory as we can hope to have, although it presents many difficulties.

We have had no postgraduate work during the

year, and no public health program of any type. Our interprofessional organization is inactive, and it is difficult to create enthusiasm because of the smallness of our numbers.

E. J. Watson, Deputy Councilor

Taylor County. Over seventy-seven per cent of the active physicians in Taylor county belong to the State Society. We lost one member by death during 1938.

We have an arrangement with the Board of Supervisors for care of the indigent whereby the indigent patient first obtains an authorization from the social worker. He presents this to the physician, who includes it with his bill, which is sent in monthly. A set fee schedule forms the basis for all charges. The bills are audited monthly by a committee appointed by the county society for that purpose, and are then paid by the Board of Supervisors as approved by the auditing committee. This plan has been very satisfactory.

No postgraduate courses were held in the county, but one member attended the pneumonia typing course given at Iowa City. We held no public health programs, and our attempt to form an interprofessional organization was a failure.

G. W. Rimel, Deputy Councilor

Union County. The following is the report of the Union County Medical Society for the year 1938:

With the exception of two members, our society is one hundred percent affiliated with the State Society. There was one new member added, and one member died.

The plan in force for taking care of the indigent group in 1938 was: For nine months the plan was under the IERA and for three months was under the Board of Supervisors with state aid. This plan was not entirely satisfactory.

A postgraduate course in obstetrics and pediatrics was held at the Greater Community Hospital.

We have had several public health programs sponsored by the county society, namely: child and adult smallpox vaccination which was county-wide; 4-H girl and boy examinations; and in Creston, physical examination of high school girls. We also cooperated in the cancer crusade by furnishing speakers, and assisted in the tuberculosis clinic at the hospital following skin testing of all known contacts. The society was active in campaigning to transfer the Greater Community Hospital of Creston, by public vote, to county ownership free of debt, as well as in obtaining substantial contributions from most of the members to make it free of debt.

We have an interprofessional organization which is active. The dentists cooperate very well with the society, presenting one of its programs in 1938.

Howard G. Beatty, Deputy Councilor

Warren County. There are thirteen practicing physicians in Warren county, of whom ten are members. We gained one new member in 1938, and did not lose any.

The relief setup is the same as we have had for the last five years. A slight difference was made in the fee bill when the county assumed the entire cost of the program about a year ago, and now there are no cuts when the amount in any one month is large. The contract is between the Board of Supervisors and the county medical society, and is very satisfactory.

We had no postgraduate course during the year. Public health programs were limited to one town, where most of the children were vaccinated for smallpox and immunized against diphtheria. Some of our members have spoken before various lay organization on socialized medicine.

We have no interprofessional association. We have had three county meetings, but for the most part our members attend the various meetings of the Polk County Medical Society and its various study clubs.

Warren county has a board of three physicians who examine all patients who are to be hospitalized at county expense. The pay for such examinations goes to our county society.

C. H. Mitchell, Deputy Councilor

Eleventh Councilor District

I hereby submit the reports of the Deputy Councilors of the counties comprising the eleventh councilor district. These individual reports set forth the activities throughout the district during the year. The district, as a whole, was the leader in the state in the cancer campaign.

M. C. Hennessy, Councilor

Audubon County. Audubon County Medical Society had one hundred per cent membership in 1938. The usual five meetings were held during the year. The same medical relief plan is in effect. A special committee goes over the bills and audits them. I feel our relief patients receive adequate medical care, and in many instances more than some people who pay their own bills.

We had no public health programs during the year, nor any postgraduate courses. We have not yet acted upon any interprofessional organization.

L. E. Jensen, Deputy Councilor

Cass County. The Cass County Medical Society has been active during the year 1938. All eligible physicians in the county hold membership in the organization. Six regular meetings, with scientific programs, have been presented by members of the local society.

A graduate and a refresher course were held in southwestern Iowa during the year. About half of the membership attended the programs.

The medical care of the poor is handled through a fee schedule arrangement with the county Board of Supervisors. There is a feeling that the fees are too low but under existing conditions are the best that can be arranged.

R. L. Barnett, Deputy Councilor

Fremont County. The Fremont County Medical Society, with thirteen members, was one hundred per cent in membership during 1938. We had no

loss by death during the year, but gained one new member, who located at Tabor.

Our public health programs included pre-school examinations of all children, done by the local physicians in cooperation with the schools; and a case-finding tuberculosis program in cooperation with the State Department of Health; an educational program in each community to impart general medical information; and cooperation with the Red Cross in establishment of first aid stations and training of personnel and public in first aid. Sixty-two persons took this first aid course. Another public health venture was the working out of a plan to give five minute talks on the early symptoms, and prophylaxis, of the common infectious diseases, to a large group of the public. The very favorable publicity and comment on this program has made us believe it should be an annual affair.

Our medical relief plan is similar to that of 1937. All cases must be certified by the welfare office, excepting emergencies. The plan has been expanded to cover PWA families, old age pensioners, and cer tain families in the very low income group. The same fee schedule is being followed. The medical society's committee audits all bills, and the Board of Supervisors depends on the director of relief, whose word is final. The plan is satisfactory in every way.

We had no postgraduate work in the county during the past year, but every member belongs to some outside society where he can obtain postgraduate instruction. Our interprofessional organization is in the process of organization. It is meeting with much favor from the various groups.

Ralph Lovelady, Deputy Councilor

Harrison County. We have sixteen members out of a possible twenty-two. Meetings are held monthly, and although we held no postgraduate course in our county, five of our members attended courses elsewhere. Medical care of the indigent is taken care of by an agreement with the county Board of Supervisors. We conducted a tuberculosis clinic during November.

A. C. Bergstrom, Deputy Councilor

Mills County. During 1938 there were twelve doctors eligible for membership, and eleven of them were active, paid-up members. The indigent or low income group is cared for by an agreement between the local medical society and the Board of Supervisors under the direction of the director of relief. Fees were practically half of the regular rates, plus ten cents per mile mileage. Although fees were low, this plan allowed free choice of physician. Each doctor rendered his bills on proper authorized forms. These were passed upon by the president and secretary of the county society before being given to the county board for final authorization and payment. In the main, this is as satisfactory a plan as any we have had. No state or federal funds were received.

No postgraduate course was held in this county, but members of the society attended those held in neighboring counties. We cooperated with the State Department of Health and the Iowa Tuberculosis Association in sponsoring a tuberculosis program in February. We also cooperated with the Red Cross and State Department of Health in typhoid immunization of flood victims in June.

Dean W. Harman, Deputy Councilor

Montgomery County. We had twenty members in 1938, out of a possible twenty-one. We lost three members, one by removal, one by death, and one by sickness, but we gained two new members. Eight meetings were held during the year.

The county medical society cooperated with the State Department of Health in a tuberculosis case-finding program, and worked on the cancer prevention program.

W. S. Reiley, Deputy Councilor

Page County. Membership in the Page County Medical Society is close to ninety per cent. Some of the men who do not belong are not in active practice, and others have financial burdens which make membership difficult. We lost one member by death, and one new physician has entered the county during the year.

Our medical relief setup is under the management of the Board of Supervisors. It is very similar in management to those of preceding years when we were on state relief, with a director of relief responsible to the Board of Supervisors. Our medical committee advises with the director of relief, and also audits the county society medical bills and the hospital bills. The dental bills are audited by a dentist, and the drug bills by a pharmacist. The fee schedule continues approximately the same as in 1937. The majority of the physicians feel that the relief plan is satisfactory as to fees. The relationship of the county society and the director of relief and Board of Supervisors is also satisfactory.

The county society is making a strong effort at present to hold county medical meetings for the purpose of transacting business and promoting scientific programs. During the past few years we have not held regular meetings.

The southwest Iowa postgraduate meetings were fairly well attended during the year 1938, but not as well as during the preceding year. Obviously there has been a loss of interest in the work. It is hard to explain the reason for this. Possibly we have had too many meetings, or possibly the subjects chosen, and the speakers selected, may be at fault.

There was no immunization program in Page county last year. We did cooperate with Dr. Steindler of the University of Iowa in presenting an orthopedic clinic at Shenandoah, which was very successful. The entire community, as well as the physicians, was much pleased with it.

Several members of our society gave talks on health subjects to various organizations. We do not have an interprofessional association.

A fine new hospital is under construction at Clarinda. It will have twenty-five or thirty beds and be adequately equipped. The new addition to the Hand Memorial Hospital at Shenandoah is now com-

pleted, equipped and in use. The new addition gives us available space for nine private rooms and a three bed ward. A nursery has been added, and a fully equipped delivery room. One of the chief improvements has been the acquisition of a bacteriology and chemistry technician for the laboratory in the new addition.

In my opinion one of the chief weaknesses in the practice of medicine in Page county is the almost total absence of postmortem examinations. Something should be done to stimulate the doctors in this matter, and to educate the public in the advantages of postmortem studies. In our medical meetings we should have more lectures by pathologists and biochemists with demonstrations. I think the state society should sponsor some kind of a program to educate the public in the value of the so-called autopsy.

W. H. Maloy, Deputy Councilor

Pottawattamie County. You will find below my 1938 report as Deputy Councilor for Pottawattamie county:

Summary of Membership Gain and Loss

Membership Roll, December 9, 1937		60
Membership Gain:		
Old members reinstated	1	
Transferred from other societies	0	
Elected from Pottawattamie county	0	1
Membership Loss:		
Members delinquent	1	
Transferred to other societies	0	
Deceased	0	
Moved from county without transfer	1	2
Net Membership loss during fiscal period		1
Membership Roll, December 15, 1938		59

Beginning October 1, 1938, Pottawattamie County Medical Society entered into an agreement whereby the society was to receive $2.00 per family for unemployed relief cases and $1.65 per family on direct relief, families on WPA to be included in the latter group. In the first group drugs were to be paid for by the society and in the second by the county. Due to a sudden, enormous increase in WPA cases certified for medical relief the horizontal cut in this group took on alarming proportions and, as a result, by vote of the society and agreement with the county officers it was decided to eliminate WPA cases from the medical program. Since January 1, 1939, such cases have been cared for on a private patient basis.

From my own experience with the plan I should say that its biggest defect is the loose definition of the term "emergency." The program is not financially equipped to include the care of chronic disease, yet the constant encroachment of this type of case represents a drain which was never contemplated by the groups which built and have modified this program.

The Pottawattamie County Medical Society sponsored a postgraduate course in the spring of 1938 which was well attended. In the fall of 1938 this county society took part in a course which was held in several towns of the district.

Public health programs: none.

Interprofessional organization: none.

Jack V. Treynor, Deputy Councilor

Shelby County. Our membership of nine includes all active eligible physicians in the county; thus we retain the one hundred per cent rating. We held five meetings during the year, these being business meetings with medical discussions by our own members. Our medical relief plan is still a fee schedule arrangement with the county. While the schedule is low the bills are paid and on the whole our plan is satisfactory to the profession, and we believe to the relief clients as well. Three meetings of the district's refresher course were held in Harlan during November. These meetings were quite well attended by our members and it seems the plan worked successfully. Our members gave considerable of their time in examining 4-H Club members, and infants at the county welfare clinic; and a total of twenty-three talks before clubs and other meetings were given by our members in the cancer educational campaign during the early months of 1938. Our members voted to accept the services of the state in a tuberculosis campaign, and in connection with this campaign more than two hundred tuberculin tests were made and some sixty patients had chest x-rays. Up to the present we do not have an active interprofessional organization, although some work toward such organization has been done.

A. L. Nielsen, Deputy Councilor

Dr. Hennessy: Mr. Speaker, I *move* the acceptance of these reports.

The motion was seconded, put to a vote and carried.

The Speaker: Report of the Delegates to the American Medical Association, Dr. Moore. (Absent.) Dr. Thornton.

REPORT OF THE DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION

The House of Delegates was in session for two and one-half days, the usual program for that body. It was addressed by Nathan B. Van Etten, Speaker of the House, President J. H. J. Upham, and President-elect Irvin Abell. Dr. Van Etten discussed the obligations of individuals and of the House of Delegates in organized medicine. Doctors Upham and Abell reviewed the current problems of medical economics with particular reference to governmental influences.

Many resolutions pertaining to economics and medical education were introduced. The press gave great prominence to a resolution from New Jersey criticising Dr. Morris Fishbein for his many activities outside those of editorship. It was apparent that interests responsible for dubbing organized medicine as static, stubborn and obstructive would be delighted with a row about the editor. Dr. Fishbein defended his record in his inimitable manner, offering his ac-

complishments in the field of public relations in support of his activities. The House was not to be divided by someone's desire for a row, and gave him a unanimous vote of confidence.

Regarding political and lay control of medical services, the House maintained its consistent record of resistance. A communication from Miss Roche, Chairman of the Interdepartmental Committee, was read to the House by Dr. Warren Draper of the United States Public Health Service. It was preliminary to the Interdepartmental Committee's then arranged National Health Conference of July and therefore was not discussed.

The delegates from Iowa were instructed to introduce two resolutions. Both received favorable consideration. One requested the Council on Foods to reconsider its policy by which it recognized advertising of oleomargarine but refused to give consideration to advertising for butter. Delegates from New York, Maryland, South Carolina, Wisconsin, Minnesota, and Nebraska joined in discussion of this resolution before the Reference Committee. The Reference Commitee recommended that the Council on Foods consider advertising for butter and prepare a statement for the public showing the relative merits of butter and oleomargarine as food products. The manner in which the House supported this resolution and reversed the policy of the Council on Foods (Morris Fishbein, Chairman) indicates clearly that the House is a democratic body and refutes statements to the contrary often seen in the press.

Your delegates were also instructed to request a study of laboratory and clinical standards for determination of alcoholic intoxication. The House supported this resolution and made this request of the Board of Trustees.

The writer came from the meeting feeling that the profession is more united than ever before and that it has a better appreciation of the dangers involved in governmental control of medical services. There is a well disseminated feeling that undesirable governmental control will be avoided by education of the public rather than by unexplained resistance.

Previous reports of the San Francisco meeting appeared in the July and August numbers of the JOURNAL of the Iowa State Medical Society. The special meeting of the House of Delegates of the American Medical Association was reported to this House on October 2, 1938, and recorded in the October and November numbers of our JOURNAL.

Fred Moore

Dr. Thornton: Mr. Speaker, I *move* that the report as printed in the handbook be accepted.

The motion was seconded, put to a vote and carried.

The Speaker: Reports of Standing Committees of the House of Delegates. Committee on Constitution and By-Laws, Dr. Henkin of Sioux City.

Reports of Standing Committees

REPORT OF THE COMMITTEE ON CONSTITUTION AND BY-LAWS

House of Delegates, Iowa State Medical Society:

Your committee has no changes to recommend in the Constitution and By-Laws at this time. The change suggested last year, which was read for the first time May 11, 1938, and comes up for vote this year, is the amendment to the constitution creating an Executive Council. It reads as follows:

Amend the constitution, Article V, as follows: Make the present Article V read Article V, Section 1. Add the following amendment as Article V, Section 2: "The Executive Council of the Iowa State Medical Society shall have full authority and power of the House of Delegates in the interim between duly authorized sessions of the House of Delegates. The Executive Council shall consist of the Councilors, the Board of Trustees, the President, the President-elect, the Secretary and the Treasurer of the Society. Fourteen members of the Executive Council shall constitute a quorum."

John H. Henkin, Chairman

Dr. Henkin: I *move* that this amendment be voted on for final adoption at this time.

The motion was seconded.

The Speaker: May I ask for a little information, Dr. Henkin? Do you include in that motion the adoption of the amendment?

Dr. Henkin: Yes, that it be voted on for final adoption at this time.

The Speaker: When they vote now, they vote for or against it?

Dr. Henkin: That was the idea I had in mind.

The Speaker: Do you understand the question? Is there any discussion? If not, all those in favor say "aye"; contrary. *It is carried.* Committee on Finance, Dr. McClure. (Absent.) Is there anyone else on that committee who wishes to make the report? If not, we will pass it. Committee on Medical Economics, Dr. Shaw.

Secretary Parker: I would suggest that the supplementary report of the Medical Economics Committee be postponed until Thursday morning.

The Speaker: Committee on Medical Education and Hospitals, Dr. Jack V. Treynor.

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

Below please find a report of the Committee on Medical Education and Hospitals which has been interested in three projects during the past year:

A. Hospital Insurance.

As a member of the Board of Directors of the Iowa Hospital Service Insurance Company serving at the direction of the Iowa State Medical Society, I have watched this company's activities and de-

velopments over a period of one year. Though progress was slow it seemed that the company's growth was sound. Efforts to eliminate objectionable features were consistent, and during the past several months there was a growing possibility of a more active participation by the Iowa Hospital Association. However, on January 17, 1939, at the annual meeting of the company, control was voted to a group of private individuals and the representatives of both the Iowa Hospital Association and the Iowa State Medical Society were removed from the board. As this change, in effect, creates a new company with no performance record and with no responsibility to the medical or hospital associations, it is my feeling that no approval can be offered by the Iowa State Medical Society and that the public should be apprised of this fact.

B. Hospitals for the Insane.

The Executive Council has received and has acted upon this committee's recommendations, to-wit:

1. That the Iowa State Medical Society encourage and cooperate in the formation of a statewide association for mental hygiene similar in character to those which are in operation in nearby states.
2. That the Council recommend that:
   a. At least one medical man, chosen by the Iowa State Medical Society, be a member of the Board of Control, or
   b. The administration of the hospitals for insane and schools for feebleminded be transferred to the Board of Health.
3. That the Council strongly recommend a more cooperative spirit between the heads of the institutions under discussion to the end that the mental hygiene of the state as a whole be better served.
4. That the Council endorse the recommendations of the Board of Control except under:
   "New Building." One master institution should be created to which all new cases should be admitted and in which there should be facilities for the care of at least fifty children. All cases susceptible of quick improvement or care should be retained at this institution, others transferred to outlying institutions for long time treatment and purely custodial care. No case should ever be placed in a county home without first having been studied adequately at this master institution. Although new or added facilities for treatment should not be omitted from existing institutions, the new hospital should by its excellence in equipment and personnel serve as a guiding and directing center for the state-wide setup.
5. That the Council study the possibility of diverting money for new hospital building to this program from the proposed National Health Program under the Social Security Act.
6. That the Council undertake a survey of the strictly medical and surgical illnesses (as opposed to psychopathic) occurring in the institutions under discussion and on the basis of this survey estimate the need, particularly, of non-resident consultation.
7. It is the sense of the Committee on Medical Education and Hospitals that this proposed program should be considered and recommended only insofar as it meets acceptable standards of treatment of mental disease through:
   a. Sufficient, properly paid personnel, medical, nursing and social service.
   b. Space consistent with decent, healthful living.
   c. Scientific equipment for adequate diagnosis and treatment.

C. Proposal to change the Medical Licensure Act to enable senior medical students to assume locum tenens.

The consensus of opinion of the Committee on Medical Education and Hospitals is that such a change is not desirable or necessary. However, the committee feels that the project should not be reported unfavorably until the reactions of physicians in the small communities is obtained. To this end it will be suggested to the Council that a sampling of opinion be obtained by a poll of physicians in "one-physician localities."

It is with real sorrow and regret that we report the death of Dr. J. E. Brinkman, member of this committee. It will not be easy to replace his intelligent counsel.

Jack V. Treynor, Chairman

Dr. Treynor: Mr. Speaker, I have nothing to add to the report as it is printed in the handbook. I *move* that the committee report be accepted and placed on file.

The motion was seconded, put to a vote and carried.

The Speaker: The Medicolegal committee, Dr. Ely.

Dr. Ely: Mr. President, no written report appears in the handbook because practically nothing has needed to be done this last year, the chief reason being, of course, that most of the members are now commercially insured. This does not mean that we are free from the invasion of the predatory profession in the matter of instituting malpractice suits. In point of fact, there is a decided increase in the number of malpractice suits in our state. This is largely ascribable to the publicity and the sentiment, the sob sister sentiment, pertaining to the underprivileged third and to the agitation regarding socialized medicine. I wish you gentlemen would go back to your various county societies and tell them to watch their step and be more careful than ever with regard to the things they are doing to avoid mal-

practice suits, because, you know, an insurance company has a certain premium. If two or more judgments are paid out to take care of three or more doctors, a big proportion of premiums received by this company is depleted. As a result, if there are more judgments and more malpractice suits, your premiums may be raised.

We have been fortunate in Iowa in regard to medicolegal problems, but this should not make us careless. Competing surgeons should not be so anxious to operate that they hustle their patient off to the hospital to get him away from their competitor, without having the family thoroughly immunized and the patient properly prepared for the hazards of the operation. Another point is that physicians who have x-ray machines should be careful in giving x-ray treatments. There are other things about which I could admonish you, but I felt it was proper to give you this warning. We are having an increase in the number of damage suits, and we must be careful or our premiums will be raised. We will have more trouble, and it will be considerably more hazardous to practice medicine in the state. I *move* the adoption of the report.

The motion was seconded, put to a vote and carried.

The Speaker: Committee on Necrology, Dr. Reeder.

Dr. Reeder read the names of the deceased physicians, while the House stood in silent tribute.

REPORT OF THE COMMITTEE ON NECROLOGY

Death came to fifty-five of our colleagues during the year 1938. The youngest was thirty-five years of age, and the oldest ninety-one. Twenty-two of these physicians died from causes not stated; seventeen of heart disease; four of apoplexy; four of pneumonia; three of coronary thrombosis; and one death each of cancer, uremia, carbon monoxide poisoning, cerebral embolism and angina pectoris.

May we stand in a quiet memorial to our departed colleagues while their names are read?

M. C. Hennessy, Chairman
James E. Reeder, Secretary

NAME	TOWN	AGE	DATE OF DEATH	CAUSE
Brackney, Herman J.	Sheldon	56	May 4, 1938	Coronary thrombosis
Blythe, Edward E.	Riverside	67	Nov. 4, 1938	Pneumonia
Boice, James C.	Washington	91	May 17, 1938	
Bradley, William E.	Estherville	72	Feb. 12, 1938	
Brinkman, John E.	Waterloo	64	Dec. 23, 1938	Heart
Brownson, John J.	Dubuque	81	Jan. 29, 1938	Heart
Brush, Milo O.	Shenandoah	53	April 23, 1938	Pneumonia
Coleman, Jennie May	Des Moines	70	Dec. 3, 1938	
Crabbe, Albert A.	Traer	67	Nov. 28, 1938	Heart
Decker, Herbert M.	Davenport	60	April 21, 1938	
DePree, Seine B.	Sioux Center	65	Oct. 3, 1938	Cancer
Dittmer, Ernest G.	Manchester	69	Mar. 14, 1938	Apoplexy
Fegers, Robert Hugh	Keokuk	56	Dec. 26, 1938	Pneumonia
Fraser, Walter	Algona	68	May 19, 1938	Apoplexy
Gingles, William W.	Castana	71	Nov. 10, 1938	
Glann, Roy C.	Bronson	59	May 24, 1938	Carbon monoxide poisoning
Gray, Albert C.	Keokuk	55	June 15, 1938	
Hageboeck, Alfonse L.	Davenport	71	July 28, 1938	Cerebral embolism
Hall, Clarence H.	Cherokee	61	Nov. 30, 1938	Heart
Harris, Edwin E.	Grinnell	71	Aug. 6, 1938	
Herrick, Thomas G.	Manson	52	Sept. 2, 1938	Heart
Hunt, Ernest A.	Des Moines	62	Mar. 4, 1938	Uremic poisoning
Huston, Ross	Des Moines	56	May 2, 1938	Heart
Johnson, Frank V.	Maquoketa	68	June 2, 1938	
Keith, Wilfred K.	Creston	67	June 30, 1938	Angina pectoris
Lezotte, George D.	Muscatine	81	July 4, 1938	
MacLaughlin, Lucius E.	Cedar Rapids	55	May 20, 1938	Apoplexy
Mansfield, Jonathan M.	Clinton	45	April 28, 1938	
Mathes, Dwight A.	Jefferson	35	Feb. 10, 1938	Heart
McManus, Thomas U.	Waterloo	65	Nov. 5, 1938	Pneumonia
Moore, Walter N.	West Branch	61	May 22, 1938	
Newcomer, Lloyd E.	Mason City	66	May 6, 1938	
Nordgren, Esaias	Des Moines	68	May 16, 1938	Heart
Oliver, Arthur J.	Muscatine	67	Feb. 19, 1938	Coronary thrombosis
Peters, Richard A.	Tipton	75	Dec. 11, 1938	
Redmond, William H.	Cedar Rapids	53	Nov. 12, 1938	Heart
Reiter, Alfred E.	Melcher	61	Dec. 8, 1938	
Roark, George	Tabor	57	June 11, 1938	Heart
Robbins, Jesse H.	Sioux City	68	June 18, 1938	Heart

NAME	TOWN	AGE	DATE OF DEATH	CAUSE
Robinson, John B.	Mt. Vernon	85	April 21, 1938	
Sala, Ono P.	Davenport	65	July 21, 1938	Heart
Schifferle, Edward	Creston	80	April 16, 1938	
Sheafe, Edward A.	Ottumwa	76	April 18, 1938	Heart
Shipley, John H.	Rippey	72	Dec. 10, 1938	Heart
Shirley, Wayne M.	Carroll	57	Mar. 20, 1938	
Slattery, Joseph T.	Dunlap	57	Jan. 1, 1938	Heart
Smillie, Benjamin A.	Gilmore City	68	Mar. 7, 1938	Coronary thrombosis
Smith, Frank W.	Red Oak	68	July 6, 1938	Heart
Sones, Calvin O.	Panora	84	Jan. 12, 1938	
Stewart, Charles E.	Palmer	75	Sept. 3, 1938	
Stookey, Calvin G.	Mechanicsville	73	Dec. 16, 1938	
Terrill, Jay S.	Bedford	56	Nov. 17, 1938	
Woodburn, William	Boone	77	Sept. 2, 1938	Apoplexy
Young, Willis M.	Jefferson	81	Sept. 30, 1938	Heart
Youngs, Daniel L.	Clarksville	73	Oct. 31, 1938	

Dr. Reeder: I *move* the adoption of the report of the Committee on Necrology as printed in the handbook.

The motion was seconded, put to a vote and carried.

The Speaker: Committee on Publications, Dr. Lee F. Hill. Is he here? (Absent.) We will go back to the report of the Committee on Finance. Dr. McClure, are you ready with your report?

REPORT OF THE FINANCE COMMITTEE

The Finance Committee of the Iowa State Medical Society met in the central office in Des Moines on Tuesday, February 7, 1939, with all members present.

The committee reviewed the audit for the fiscal year 1938, including all bills with their corresponding orders and checks, and found the audit correct. The committee therefore accepted it as prepared by Widdup and Company.

The outstanding notes were inspected. No change was found in the status of the 1932, 1933, 1934 and 1935 notes. Four notes for 1938 dues were found to be unpaid, amounting to $40.00.

The secretary was instructed to make a record of checks outstanding January 1, so that they might be checked when the committee goes over the books in 1940.

Ernest C. McClure, Chairman
A. S. Bowers
H. A. Tolliver

Dr. McClure: I *move* the acceptance of the report as printed in the handbook.

The motion was seconded, put to a vote and carried.

The Speaker: Committee on Public Policy and legislation, Dr. Fred Moore. (Absent.) Reports of Special Committees of the House of Delegates: Baldridge-Beye Memorial Committee, Dr. Weingart.

Reports of Special Committees

REPORT OF THE BALDRIDGE-BEYE MEMORIAL PRIZE COMMITTEE

The following essays were submitted to and reviewed by this committee: A Study of Meningeal Permeability; The Effects of Combined Red Nucleus and Pyramidal Lesions in Cats; and Delayed Anaphylactic Shock Precipitating Serum Sickness After Injection of Foreign Protein Serum. The first essay was unanimously judged the best, and the winner, Sidney L. Sands, was invited to attend the banquet at the annual meeting, at which time announcement was made of his winning the contest. All three essays were of high standard, and the committee felt that the contest was worthwhile in that it provoked such excellent essays.

Julius S. Weingart, Chairman
Emerson B. Dawson
Herbert W. Rathe

Dr. Weingart: This year a problem arose in regard to the awarding of this prize. Only one essay was submitted in the contest. Dr. MacEwen wrote the committee, asking whether he should forward this essay to us. It was the consensus of the committee that this should be done and, also, that we should recommend the award if the essay, in our judgment was of sufficient merit. No rules regarding this contest have even been established. Therefore your committee was compelled to rely on its own discretion in this matter. We all thought that even one contestant who had spent much time and labor on his thesis should be given a fair hearing and, also, that if this were not accorded him, future contestants would be discouraged. The essay submitted had the title "Hypersensitivity as a Factor in Chronic Monilia Vaginitis: 1. Skin Testing with Commercial Oidiomycin," and the contestant submitted this under the pseudonym, R. Thomas. Your committee considered this essay to be of sufficient excellence to merit the prize, and therefore recommends the award. I have here the essay, my report and, in a sealed envelope, the actual name of the writer which I submit and leave this matter to your judgment.

The Speaker: What is your pleasure on this report?

Dr. Risk: I *move* the recommendation be approved.

The motion was seconded, put to a vote and carried.

The Speaker: Committee on Child Health and Protection, Dr. McBride.

REPORT OF THE COMMITTEE ON CHILD HEALTH AND PROTECTION

In December, 1937, the Committee on Child Health and Protection met with representatives of the Parent-Teacher Association and the 4-H clubs to formulate policies of cooperation between both groups and the medical profession. This was explained in our report to the House of Delegates last year.

We are happy to say that the work of the Parent-Teacher Association has gone forward very satisfactorily so far as the medical profession is concerned, and we hope the Parent-Teacher Association has been pleased with the results of that conference.

At the 1938 meeting of the House of Delegates, this committee definitely recommended that a fee be charged for making the 4-H Club examinations, that the preliminary examinations be made in the office of the family physician, and that the final examinations be made by a committee of physicians appointed by the county medical society. You accepted that recommendation on Wednesday, May 11.

On Thursday, May 12, our committee met with representatives of the 4-H Clubs, the Medical Economics and Legislative Committees of the State Society, and the Speakers Bureau. At this meeting we explained our position again to the 4-H Club officials, who agreed with us that the objective of the 4-H Club examinations should be the improved health of every boy and girl. Both groups felt that better physical examinations were needed, and that health education would be most helpful.

Our committee offered to prepare radio talks dealing with various illnesses and the rules of health, and to make copies of these talks available to the leaders of the 4-H Club groups over the state. The offer was accepted. We also recommended that a key physician be selected in each county, to work with the 4-H Club groups and act as liaison man between them and the medical profession. Such a physician could aid greatly in a health education program.

In August the chairman of this committee met with the executive secretary in the central office and selected a series of radio talks dealing with respiratory diseases for use during the first year. The executive secretary then invited one of the 4-H Club officials to come to the office to go over the talks and see if they suited the purpose, but the invitation was not accepted. The matter was then turned over to the Speakers Bureau, which has charge of the radio talks, and I am told that it has arranged for a series of talks to be given in the spring of 1939, so that our work has borne some fruit.

Robert H. McBride, Chairman

Dr. McBride: Due to the fact that our report was not entirely complete at the time the handbook was published, an addendum has been sent to you. I think you all received this outline for a statewide vaccination program. Some time in December, at a meeting of the Council, our committee was asked to provide a plan for conducting a statewide vaccination program. Our committee met in March and again later. The outline which you have is the outcome of those meetings.

It is well known that the state of Iowa is very poorly vaccinated against diphtheria and smallpox. We limited the program this year entirely to smallpox because we thought it would be less confusing to the laity. Last week's report from the State Board of Health showed there were forty-seven cases of smallpox reported in the state of Iowa for that week. That is more than there are in the state of New York and all of New England combined for a year. In an eight-year period, with thirty-two and one-half million people, New York State and New England reported 2,207 cases of smallpox. In the same period, the state of Iowa, with a population of two and one-half millions as of 1930, reported 10,764 cases, which illustrates the difference between places in which smallpox vaccination is well carried out and places where it is not.

The program as outlined is designed to enlist the help of lay organizations, such as the women's clubs, the P.T.A., the Veterans' Bureau, and so forth, but to keep the program under the control of the doctors and to keep the vaccinations in the doctor's office insofar as possible. Your committee feels that wholesale vaccination in school houses, crossroads, and so forth, is a bad practice, and that the vaccination should be done by the family doctor, in the family doctor's office. Our thought was, if we could not get good cooperation in this matter, it would probably be better in the future, at the time the legislature meets again or some subsequent time, to try and obtain some state legislation requiring vaccination before a child enters school.

I *move* the acceptance of the report.

The motion was seconded, put to a vote and carried.

The Speaker: Next report is that of the Clinical Committee, Dr. Lester C. Kern, Chairman.

REPORT OF THE CLINICAL COMMITTEE

The Clinical Committee of the Iowa State Medical Society has had meetings at Waverly, Ames (with the Iowa Safety Council) and Waterloo, Iowa, to consider the subject of scientific tests for alcoholic intoxication.

The committee feels, in submitting the following recommendation, that it has functioned as intended by the appointing body.

During the past year similar resolutions have been approved by the Iowa State Medical Society, the American Medical Association, the Iowa State and the National Safety Councils, and many other safety groups.

The committee requests that a copy of these resolutions be sent to the Legislative Committee of the Iowa State Medical Society and the Iowa State Bar Association, with the request that legislation be

drawn up that will give this problem adequate scientific and legal standing.

The Clinical Committee of the Iowa State Medical Society, composed of Doctors C. W. Ellyson, Waterloo; L. C. Kern, Waverly, and H. W. Morgan, Mason City, makes the following recommendations regarding the use of scientific tests for intoxication:

1. We recommend that clinical blanks be used by officers or physicians examining an individual for intoxication and that these blanks shall be similar to those recommended by the National Safety Council.

2. We recommend that a laboratory report of the alcohol in the blood or urine or spinal fluid be submitted by a competent laboratory in each case.

3. We recommend that necessary legislation which shall allow a police officer to call a physician to obtain a blood specimen for such a test be passed.

4. We recommend that there be a clarification of privileged communication which has made it impossible in the past for a physician treating a patient to testify that he has taken blood or urine for examination.

5. We recommend the use of blood or urine or spinal fluid for these tests.

6. We recommend that a form be drawn up to be filled out by a physician or officer securing a specimen and that standardized containers together with necessary instructions be provided for the use of arresting officers.

7. We recommend that standardized laboratories and licensed laboratory technicians of acceptable qualifications be approved by the courts in centrally located districts, preferably corresponding with the offices of the state highway patrol.

8. We recommend that a standardized fee for the services of the physician collecting the specimen be the customary fee charged for a similar service in private practice and the laboratory charge be the regular charge for that type of service in that locality. We suggest that the responsibility for payment of such costs be allocated as court costs, and if it is impossible for police or physician to secure a specimen without compulsion that they receive a signed, witnessed statement from the accused stating that he has refused such a test.

L. C. Kern, Chairman
H. W. Morgan, Secretary
C. W. Ellyson

Dr. Kern: I *move* that the report as published in the handbook be accepted and that the committee be discharged.

The motion was seconded, put to a vote and carried.

The Speaker: Next is the Fracture Committee, Dr. Conzett.

REPORT OF FRACTURE COMMITTEE

The Fracture Committee in its second year of existence has attempted further education in the early care of fractures as it pertains to the man in general practice. On October 20, 1938, an all-day meeting was held under the direction of Drs. W. E. Wolcott and Verl Ruth of Des Moines. The Des Moines orthopedists conducted a dry clinic during the morning hours and in the afternoon papers were presented by Dr. Albert Key, St. Louis, Missouri; Dr. J. E. M. Thomsen, Lincoln, Nebraska, and Dr. Walter Abbott, Des Moines, Iowa. Over one hundred and fifty members of the State Society attended this meeting. During the year many county societies had meetings devoted to fracture management. The meeting sponsored by Pottawattamie County and arranged by Dr. Karl Werndorff was outstanding. Linn County had two meetings at which fracture treatment was considered. On May 18 your chairman addressed the Iowa Funeral Directors Association relative to transportation of fractures. The committee this year is conducting a survey of gas gangrene cases under the direction of Dr. Fred Knowles of Fort Dodge. The trustees made funds available toward starting a library of moving picture films depicting fracture treatment. These films will be available to the county societies for use at their meetings. Educational work in fracture treatment is slow and undramatic, but with the continued help of the county representatives the fracture work in Iowa will show definite improvement.

Donald C. Conzett, Chairman

Dr. Conzett: I *move* the acceptance of the report as published in the handbook.

The motion was seconded, put to a vote and carried.

The Speaker: Next is the Historical Committee, Walter L. Bierring, Chairman. (Absent.) Next is the Medical Library Committee report, Dr. Throckmorton.

REPORT OF THE IOWA STATE MEDICAL LIBRARY

Statistics for 1938

Pieces of literature loaned		18,405
Pieces of literature consulted in library		10,603
		29,008
Requests for literature by mail	1,999	
(Special Delivery, 4; Air Mail, 1; Telegrams, 1)		
Requests for literature, local	1,713	
		3,712
Patrons served in the library		3,029
Bibliographies prepared		40
Letters written	1,573	
Postal cards written	1,447	
		3,020
Telephone calls, incoming (Long Distance, 8)		923
Accessioned volumes in library		21,390
Periodicals received by paid subscription	178	
Periodicals received by gift subscription	36	
		214
Reprints		27,500
Gifts to the Library:		
Books	556	
Reprints	165	
Journals	13,478	
Museum Exhibits	1	
Gifts to Other Libraries:		
Books	627	
Journals	3,632	
		4,259

Jeannette Dean-Throckmorton, M.D.
Chairman Medical Library Committee

Dr. Throckmorton: The Iowa State Medical Library was vitally affected by a bill brought before the legislature this spring. After exactly twenty years of existence as the Medical Department of the Iowa State Library, governed by a state librarian who alone was responsible to a library board of twelve members, it is now an independent library with the official title of "Iowa State Medical Library." The above mentioned bill eliminated the state librarian, and made the medical librarian directly responsible to a Library Board of three members: The Governor, the Superintendent of Public Instruction and one Supreme Court Justice. The bill was passed unanimously by both the House and Senate and became a law February 16, 1939. The Medical Library is greatly benefited by this act, since it is no longer under a state librarian.

With the death of Mr. Johnson Brigham, the state librarian for over forty years, who was instrumental in starting the medical department, the Medical Library lost one of its best friends, and under the succeeding state librarian endured a period of financial stringency and distress during which the support fund, destined for new books and journals, was diverted from its purpose and autocratically reduced to such an extent that there was scarcely enough money to pay for subscriptions, with not one penny for new books. Standing orders for transactions and yearbooks had to be cancelled because there was no money. After the office of state librarian was abolished, the state generously offered to pay bills for standing orders. The legislature, just adjourned, has allowed a support fund of $3,000, which is generous, considering the present effort for economy. Of this amount, $500 can be spent for binding, which is desperately needed.

The Iowa State Medical Society this spring phoned to know if I could use a number of Fairchild's History of Medicine, sending over thirty-seven copies. I was delighted and immediately placed copies in the historical department in the Historical Building, an extra one in the medical library, and sent two copies to the Surgeon-General's Library in Washington, D. C. Letters were sent to the seventeen largest public libraries in Iowa asking if they had a copy and, if not, would they like one. Clinton replied that it had had one, which was now lost. Fort Dodge, only, of all Iowa, had a copy, given through the kindness of Dr. Glesne. Consultation with the Historical Department resulted in the selection, for free gifts, of nine historical libraries whose states were mentioned in the Fairchild History. About this time the State Society phoned that about one hundred volumes had been overlooked, and did I wish these? Very happily I caroled back that I certainly did and, thus, today I may announce the placing of Dr. Fairchild's History of Medicine in Iowa in twenty-four Iowa public and college libraries, in thirty-five medical libraries and eighteen historical libraries, with the distribution not yet finished. I hold here gracious letters of thanks from Drake University, State University of Iowa, Boston Medical Library, New York Medical Library, Johns Hopkins, Surgeon-General's Library, and others. Several medical libraries generously offered copies of their specific history, so that your medical library is the richer by:

1. History of Medicine in Massachusetts, Harvard University, School of Medicine.
2. History of College of Physicians and Surgeons, Columbia University, New York.
3. Medical Annals of Maryland, Medical and Chirurgical Faculty of State of Maryland.
4. History of Medicine in North Dakota, State Historical Society.

I hold here two sheets of double-columned, closely typed names of Iowa doctors who have given material to the medical library the past twelve months, April, 1938, to April, 1939, books, journals, and reprints to the total of 18,197. You certainly have been generous. I cannot read all of the names, but may I mention a few of the largest gifts:

Bamford Clinic of Centerville	1530
Iowa State Medical Society	1580
Dr. W. L. Bierring, many books just bound	1379
Dr. O. A. Geeseka of Mount Pleasant	4983
Dr. J. E. Reeder of Sioux City	1185
Dr. D. J. Haines of Des Moines	805
Dr. Florence Johnston of Cedar Rapids	446
Dr. J. T. Strawn of Des Moines	327
Dr. E. L. Wurtzer of Clear Lake	285
Drs. Rohlf, Rathe and Hardwig of Waverly	325

Since January of this year, the medical library has added 626 books, of which the state paid for none. This certainly shows the interest and support you doctors give. I am very grateful to you, for your gifts have helped keep the work going when there was not one cent for books.

Two framed pictures have come to the medical library through the kindness of Dr. C. F. Patterson of Des Moines. They are of the doctors at the 1919 meeting and the medical faculty of Drake University. Do any of you have other pictures that you might wish to give to the Iowa State Medical Library, so that one hundred years from now, posterity may know what intellectual and handsome doctors you are, and be stimulated to emulate your greatness? Anything you wish to give, I shall be happy to have.

In closing, may I make a comparison of the medical library today, with its condition ten years ago when I became medical librarian.

At that time there were 9,000 books; today there are over 22,500. Important as the number of books may be, still more so is the amount of use those books receive. Mr. Dooley, in defining the word "library" said, "Libus meaning a book; ary meaning nary; library meaning nary a book"; in other words, all the books were out on loan. I like this definition. I do not want the medical library to be a mere repository for books; I want it used, and I want to see the use continually increasing. In 1929, 2040 people used the library, consulting 9,000 pieces; last year 7,000 patrons used it, consulting 30,000 pieces of literature.

With the use of the library increased almost four times, with no increase in the number of assistants, it has been difficult to select and get literature into the mail the same day the letter was received, but this has been done. An extra assistant, who will also take on the duties of a shipping clerk, has been allowed and this much needed help will ease the strain of the work and cut down on overtime now put in. I hope for more room, which will make the work easier. Altogether, under the new order of things, the new library bill, the generous support fund, the extra assistant, and extra room, a rosy future seems ahead for the Iowa State Medical Library, which welcomes any request for its services that you doctors may wish to send.

I *move* the adoption of this report.

The motion was seconded, put to a vote and carried.

The Speaker: Committee on Military Affairs, Robert Sherman Shane. (Absent.)

REPORT OF THE COMMITTEE ON MILITARY AFFAIRS

During the past year interest in military affairs has been stimulated among the profession by holding meetings devoted to these affairs in a number of counties. Competent speakers who showed the medical profession its responsibility for adequate medical preparedness were provided.

The 1938 annual dinner meeting of the military surgeons of the state was addressed by Lt. Col. Beeson, M.C., and Capt. Craft, M.A.C., both from the office of The Surgeon, Seventh Corps Area, Omaha, Nebraska. Their remarks were quoted in several national medical publications.

Through the efforts of the Committee on Military Affairs, an address before the general assembly of the State Society at its annual session has been arranged. The committee has also arranged for an adequate military exhibit.

The committee recommends, for the year to come, four things:

1. That county societies devote one meeting each year to a program dealing with military affairs in order that its members may be reminded of the medical profession's responsibility in the program of national defense;

2. That a suitable speaker from the Army Medical Corps be given a place on the program at the annual meeting of the State Society;

3. That a military exhibit be held at the 1940 session of the Iowa State Medical Society; and

4. That Commanders of National Guard and Reserve Units of the Medical Department be encouraged to have their personnel attend the annual meeting of the Military Surgeons held during the annual session of the State Society in order to promote interest in military matters and foster esprit de corps.

H. A. Spilman, Chairman
Ben T. Whitaker
R. S. Shane, Secretary

Dr. Spilman: I *move* the acceptance of the report as printed in the handbook.

The motion was seconded, put to a vote and carried.

The Speaker: Committee on Public Relations, Dr. H. E. Stroy, Osceola.

REPORT OF THE COMMITTEE ON PUBLIC RELATIONS

Your committee was requested to pass on the program of newspaper publicity relative to refractive errors as presented by the Physicians Optical Laboratories. Your committee found the type of presentation to the public to be ethical in every way and of a distinct educational value in helping the lay public to discriminate between the optometrist and the oculist.

In other respects your committee has not been very active, which we feel is due in a large part to the vague nature of its function. We feel that it would be fitting for the House of Delegates or Council to formulate an outline of activities that it expects the committee to follow. Your committee will endeavor to cooperate in every way possible.

H. E. Stroy, Chairman

Dr. Stroy: I *move* the acceptance of the report as printed in the handbook.

The motion was seconded, put to a vote and carried.

The Speaker: Committee on Scientific Exhibits, D. N. Gibson. (Absent.) Woman's Auxiliary Advisory Committee, Dr. C. B. Hickenlooper of Winterset. (Absent.) Committee on Publications, Dr. Hill.

REPORT OF THE PUBLICATIONS COMMITTEE

Last year your Publications Committee submitted a table containing figures which set forth the major items of interest incident to the publishing of the Journal. This year we have a slightly more favorable outlook to present.

	1936	1937	1938
Reading Pages	720	672	650
Advertising Pages	320	316	322
Percentage of Reading Pages	70%	68%	66.9%
Original Articles	129	96	98
Editorials	47	59	72
Total Cost of Journal	$12,791.05	$12,214.10	$12,422.58
Total Journal Income	8,308.57	7,566.09	8,132.31
Net Expenditure for Journal	$ 4,482.48	$ 4,648.01	$ 4,290.27
Number of State Society Members	2,355	2,379	2,391
Net Expenditure per Member, based on year's membership	$ 1.90	$ 1.95	$ 1.79

It will be noted that the expense per member for the actual publishing of the Journal was considerably lower in 1938 than in previous years. This is accounted for, in part, by a slight increase in advertising rates which became effective January 1, 1938; and in part, by additional advertising which has been secured for the Journal. We like to believe that our appeal to you last year for support of and cooperation with firms advertising in the Journal is responsible for the encouraging prospects during 1939. Several new advertisers have made their appearance in our publication, and we earnestly solicit your con-

tinued cooperation in this respect. We feel that this phase of the JOURNAL'S activities is sufficiently important to warrant special mention before your county medical societies at least once during the year. A few well chosen words from our members to the detail men calling upon them, directing attention to the value of advertising in the JOURNAL of the Iowa State Medical Society will accomplish much more than any letters or interviews from the central office. It is our hope that you, as official representatives, will carry this message to your county society officers, together with our appreciation for past efforts.

Turning from the necessary commercial angle of the JOURNAL'S existence, may we compliment the profession at large on the excellent quality of medical papers submitted for publication. Only a few papers have been rejected because of poor preparation or lack of general reader interest. A topical resumé of the scientific articles published in 1938 presents evidence that our essayists are keeping abreast of the progress in the medical world today, and that our readers, the members of the Iowa State Medical Society, are as well informed on current topics as any throughout the nation.

The increase in the number of editorials is a direct result of our policy of keeping our membership informed on the new and various medical economic problems and the proposed solutions for them. A special word of commendation is in order for the chairman of the Medical Economics Committee, who has each month supplied the JOURNAL with worthwhile and interesting material in connection with the work and recommendations of this committee.

The task of editing a valuable state medical journal is no small endeavor. We cannot and would not wish ever to feel too satisfied or complacent with our efforts. Your continued suggestions, advice and assistance are requested, and we assure you they will be gratefully received.

Lee Forrest Hill, Editor

Dr. Hill: The only additional point that I want to make to the report as published in the handbook is again to urge all of the delegates, when they go back home, to request the doctors in the county societies to ask detail men if the products they are selling them are advertised in the JOURNAL. It is surprising what a difference it makes if half a dozen doctors ask a detail man if the product he is selling is advertised in the JOURNAL. This will accomplish much more in securing advertising contracts than any letters sent from our central office. It is not only an advantage to the JOURNAL and to you in a financial way, as you will see by the report this year, to have these articles advertised in the JOURNAL, but it is also a matter of safety, since you can be sure when you see any product advertised in the JOURNAL that it has been thoroughly investigated and approved.

I *move* the adoption of the report as it is printed in the handbook.

The motion was seconded, put to a vote and carried.

The Speaker: Committee on Public Policy and Legislation, Dr. Fred Moore.

REPORT OF THE COMMITTEE ON PUBLIC POLICY AND LEGISLATION

In April, 1938, your committee began urging members of this Society to exercise their civic responsibilities by influencing capable persons to seek nomination for public offices in Iowa at the primary election. In May your committee sent to all members of the Society a ten-page bulletin which listed votes of members of the previous General Assembly on bills of particular interest to doctors. Through the summer and fall, as opportunity afforded, your committee tried to stimulate the interest of members of the Society in selection of the best persons available for state offices.

Attention and energy have been devoted to dissemination of information regarding the proposed national health program of the President's Interdepartmental Committee. Members of your committee have addressed many meetings, both lay and medical, throughout the state on this subject. The committee appreciates the expressions of interest of members in avoiding governmental controlled programs and commends their efforts in contacting congressmen with reference to this subject. Your committee has provided copies of J. G. Crownhart's "Sickness Insurance in Europe" for all congressmen. It has also distributed copies of a pamphlet on this subject ("On the Witness Stand," printed by the New York State Medical Society), to all members of the Woman's Auxiliary.

Active support has been given to the Iowa Interprofessional Association. The first program was held in conjunction with the annual meeting of the State Association of Iowa Registered Nurses at Waterloo on October 12, 1938. The program consisted of an address on "The Mutual Interests of the Professions in the Basic Sciences," by H. V. Gaskill, Ph.D., Dean of Industrial Science, Iowa State College, Ames; and two addresses on the national health program, one by Dr. C. E. Waller of the United States Public Health Service and a member of the Technical Committee on Medical Care, and the other by the Right Reverend Monsignor Maurice F. Griffin, Member of the Board of Directors, American Hospital Association, Cleveland, Ohio. The meeting was a public one, with about one thousand persons attending. A full account of the meeting and a copy of the addresses delivered appeared in the November JOURNAL of the Iowa State Medical Society. All present regarded it as an excellent meeting. The small attendance of medical men was a source of regret on our part. Reprints of the meeting were sent to all members and officers of the House of Delegates of the American Medical Association, and provoked much favorable comment. The Pennsylvania State Medical Society wired for one hundred copies. The committee believes that programs of this character in connection with state meetings have great possibilities in the field of public relations.

Last year attention was called to a decision of the

Iowa Supreme Court in the case of State of Iowa vs. Boston. This was a case in which one group of chiropractors stimulated prosecution of another group on a charge of violation of the practice acts. The Supreme Court decided that use of physiotherapy and advice regarding diet and exercise were not a part of chiropractic practice. The defendant requested a hearing, and the request was granted. Recently the Supreme Court released its supplemental opinion after the rehearing. This opinion reaffirms the previous decision with clear and convincing statements. The following is from the record:

"It seems to us that the use of the appliances or modalities in the case at bar does come within the domain of medicine and surgery and would constitute a part of that practice. Therefore, as it constitutes a part of the practice of medicine and surgery, and does not come within the definition of chiropractic, the injunction was properly issued.

"It is urged that adherence to our former opinion will bar the use of mechanical appliances or common instruments by barbers, coaches, and others. The classes mentioned are not engaged in the practice of medicine, or of healing, nor are they holding themselves out to the public as healers.

"The reason for all laws restricting this and other professions is the protection of the public, and to that end the legislature has seen fit to enact laws and provide means for enforcing the regulations governing the practice of the various forms of the art of healing, permitting each practitioner to follow his profession according to its established principles. Each may have its merits; but those persons who are authorized to practice one form of the art may not encroach upon another form for which they have no authority from the state."

The original decision, and fear of unfavorable action after rehearing, undoubtedly stimulated these groups to introduce bills into the present legislature which if passed will validate for them some of the forms of practice denied them by the Supreme Court. Unfortunately the group seeking these privileges has attempted to create the picture that their difficulties originated with the medical profession. As a matter of fact, they had their origin within their own ranks.

As this goes to press (March 9) we are in the midst of the Forty-eighth General Assembly. Members of the Society have been kept informed by numerous letters and bulletins as occasion has required. Since final disposition of the measures affecting public health and medical practice has not yet been made, a further account will be made from the floor.

Members of the Society should be mindful of two facts in legislative matters. First, they have tremendous power and influence. Second, this is most effective when exercised through home contacts with legislators.

Fred Moore, Chairman
R. D. Bernard
L. A. Taylor

Dr. Fred Moore: Do you wish a report in addition to what is in here? Of course, as far as this legislation is concerned, the material contained in the handbook is obsolete. Perhaps the first thing to do would be to move the adoption of this report as printed in the handbook. Then, if you wish an additional report, I will be glad to give it.

I *move* the adoption of the report.

The motion was seconded, put to a vote and carried.

Dr. Moore: In regard to additional reports, I should like to ask permission of the House to have Dr. Bernard report first on the activities in interprofessional work.

The Speaker: Is that agreeable to you, gentlemen? (Agreed.) Very well, Dr. Bernard, will you report on the interprofessional activities?

Dr. Bernard: The Iowa Interprofessional Association has had a very busy year. Large and enthusiastic county meetings have been held. The House of Delegates, at its special meeting October 2, 1938, discussed the relationship of this organization with the Iowa State Medical Society, and voted to give the Legislative Committee the right to use society funds to set up special educational programs for the interprofessional meetings. Members of the faculty of Iowa State College at Ames, Drs. Bruce, Stahr, and Smith of Fort Dodge, Mr. Denny Brann, and Mr. George McChane are to be mentioned, especially, for the many long trips they took, and the excellence of the programs they presented. Out of the state speakers were used in several meetings. State medicine was discussed in all of these sessions.

The first annual Interprofessional meeting was held October 12, 1938, at Waterloo. The Iowa State Association of Registered Nurses delegated Thursday afternoon of their annual meeting for this program, and some one thousand were in attendance. The doctors were conspicuously absent. Dean H. V. Gaskill of Ames, C. E. Waller, M.D., Assistant Surgeon General of the United States Public Health Service and member of the Technical Committee on Medical Care, and the Right Reverend Monsignor Griffin of Cleveland, were the speakers. This program was enthusiastically received, and very definitely set a high standard for the future.

The second annual meeting was held in conjunction with the Iowa Pharmaceutical Association in Des Moines, on April 6, 1939. Another outstanding program was presented. Mr. J. G. Crownhart, Secretary of the State Medical Society of Wisconsin, discussed Socialized Medicine in Europe. This was an outstanding address. I might mention that in the last three weeks I have had over twenty requests from various organizations on how to contact Mr. Crownhart. C. E. Rudolph, D.D.S., of the College of Dentistry, University of Minnesota, spoke on the Place of Voluntary Organizations in Democracy. Again, in this particular meeting the doctors were conspicuously absent. Both of these programs were presented for their educational value to the allied professions.

The future of this organization is assured. The groups are cooperating. We are making progress slowly, and organizing on a sound basis. Two districts, one comprising four and another seven counties, were organized this past winter. This type of

organization will work out very satisfactorily in the few remaining counties that are not yet organized.

The Speaker: Dr. Moore, will you continue with the remainder of the report?

Dr. Moore: Before we take up our own state affairs, it might be well to refer to the Wagner National Health Bill which was introduced in Congress on February 28. Senator Wagner of New York has introduced a bill which provides the entire program as proposed in the National Health Program by the Interdepartmental Committee, except with reference to the amounts to support it. In other words, his requested appropriations are less to start with; at least the graduated scale is a little less than that suggested by the Interdepartmental Committee. It is generally conceded that the authorities at Washington, perhaps, have softened their tone a bit in their presentations, but I do not believe they have changed their objectives in any respect.

A study of the Wagner Bill will reveal to you that incorporated therein is every item which you will find in the proposed National Health Program of the Interdepartmental Committee. There is, perhaps, this difference; that the report of the Interdepartmental Committee declares very definitely in favor of some kind of insurance scheme operated by state governments. Of course, any kind of governmental insurance scheme would have to be in the nature of compulsory health insurance. However, in all other respects, the proposed bill of Senator Wagner makes provision for the entire content of the National Health Program as proposed by the Interdepartmental Committee.

I think all of you are familiar with that program and it should not be necessary to review it here. I think it would be an appropriate thing for this House of Delegates to appoint a committee for the consideration of this Wagner Bill and to bring to a subsequent meeting of the House a definite resolution on which the House might act, which would express its attitude with reference to this bill, and provide for making its attitude known to the representatives of Iowa at Congress. I *move* the appointment of such a committee.

The Speaker: It is *moved* and *seconded* that a committee be appointed to report at the next meeting of the House of Delegates. Is that it Dr. Moore?

Dr. Moore: Yes. That will be the day after tomorrow.

The motion was put to a vote and carried.

The Speaker: Who will you have for your committee?

Dr. Moore: I should have included that it was to be appointed by the President.

The Speaker: I am willing to grant that power to the House of Delegates, if it wishes to take that right. Who will you have for your committee? If you do not recommend anyone, I will turn this back to the Legislative Committee with the addition of my distinguished chief here, Dr. Erskine. Is that satisfactory? Do you approve of that committee? (Approved.) Have you some more on the report?

Dr. Moore: I wonder if at this time any of the members of the House would like to present questions regarding this bill.

The Speaker: Does any doctor wish to ask Dr. Moore some questions concerning this legislation?

Dr. Moore made an informal report.

The Speaker: Is Dr. McCoy, the Treasurer, here? (Absent.) Does anyone move that that report be accepted, that we may clear the order of the day?

REPORT OF THE TREASURER

House of Delegates, Iowa State Medical Society:

The financial statement of the Society for the year 1938 is herewith respectfully submitted. The books and accounts of the Society have been audited by a certified public accountant, and his detailed report is on file in the offices of two of the trustees, John I. Marker at Davenport, Lee Roy Woodward at Mason City, and the third copy in the central office. Any physician wishing to see the detailed report is invited to inspect the one nearest him.

For the sake of clarity and brevity, a concise financial statement is given below:

INCOME AND EXPENSE ACCOUNT

INCOME		
Dues		$21,895.00
Advertising		6,827.22
Reprints		1,163.23
Miscellaneous		141.86
Speakers Bureau		
Fees		3,791.42
Travel Expense Refund		15.00
Annual Session		2,745.50
Returned Check—Payment		9.67
Interest, Savings Account		31.77
Interest from Bonds		1,393.12
TOTAL INCOME		$38,013.79
EXPENDITURES		
Administrative Miscellaneous		$ 1,189.53
Rent and Office Supplies		1,924.27
Stationery and Printing		776.23
General Salaries		4,633.45
County Society Services		195.88
Trustees		181.43
Council		1,279.63
Medicolegal Committee		422.42
Legislative Committee		4,500.00
Medical Economics Committee		468.37
Other Committees		845.42
Annual Session		3,072.89
Journal Printing and Engraving		11,383.64
Reprints		1,038.94
Bank Charges		6.34
Total		$31,918.44
Speakers Bureau		
Salaries	$1,290.00	
Travel Expense for Speakers	752.53	
Postgraduate Courses, Travel Expense	1,884.01	
Radio Talks	101.81	
Cancer Talks	74.64	
Stationery, Printing, Telephone, etc.	1,312.16	
Miscellaneous	78.84	
Total		5,493.99
TOTAL EXPENDITURES		$37,412.43

EXCESS INCOME OVER EXPENDITURES		601.36

* * *

Investments and total funds are shown in the following analysis and summary:

Net Income for the year 1938		$ 601.36
Cash in Banks at beginning of year		1,643.53
Treasury Bonds on hand at beginning of year (cost)		44,491.09
Total Funds		$46,735.98
Represented by:		
Cash in Banks:		
Bankers Trust Co. (Treasurer's Account)	$ 542.25	
Bankers Trust Co. (Secretary's Account)	89.82	
Bankers Trust Co. (Savings Account)	1,612.82	
Total Cash in Banks		$ 2,244.89
Treasury Bonds:		
3% Due 9-15-55 (Par Value)	$ 9,000.00	
3⅜% Due 3-15-43 (Par Value)	25,500.00	
2¾% Due 6-15-54 (Par Value)	5,000.00	
2½% Due 12-15-53 (Par Value)	5,000.00	
Less Discount on Purchase of Bonds	8.91	
Total Treasury Bonds (Cost)		44,491.09
TOTAL CASH AND BONDS (As Above)		$46,735.98

Harold J. McCoy, Treasurer

Upon motion made and seconded, the report of the Treasurer as printed in the handbook was accepted.

The Speaker: Committee on Medical Economics.

REPORT OF MEDICAL ECONOMICS COMMITTEE

Immediately after the 1938 session of the Iowa State Medical Society the Medical Economics Committee started work on the Survey of Medical Care as requested by the American Medical Association. Meetings with the secretaries and committee members of the various county societies were held in each district, to explain the survey, and discuss the information desired on the various blanks. A majority of the county societies were represented at the various meetings. The actual conduct of the survey has been slow except in a few instances. The various correlated organizations and individuals cooperated well in returning their blanks, but the response of the members of the Society has been below fifty per cent. There seemed to be a feeling after the report of the National Health Conference that the survey was unnecessary and the individual members decided not to carry it through. The survey of the state institutions and services has been completed.

In September, due to a change in the relief setup, the committee met with members of the counties still receiving state funds and after discussion appointed a group to interview the committee of the state relief office. This was done and without much difficulty our request that the amount for medical relief be raised, and that the funds allotted for medical relief be left to accumulate, if not used, for use in months having a heavy load, was granted. The increase in funds, plus the cumulative feature, improved the payment for medical relief materially in those counties during the time it remained in force.

No new collection agencies were approved during the year. Two applications were made for approval, but action was delayed until such time as the local county medical societies in the counties in which these agencies operate shall approve the organizations.

The committee, through representatives on the board of the Iowa Hospital Service Insurance Company, kept close track of the operation of the company through the year. It was operating successfully, but at the annual meeting of the policyholders the company was changed to a general casualty company, writing hospital insurance incidentally. As a result the Medical Economics Committee felt it wise to withdraw all semblance of approval of the company, and let it proceed on its own merits. The Iowa State Medical Society is cooperating, at the time of this report, with the Iowa Hospital Association in supporting passage of an act by the state legislature to legalize the formation of non-profit hospital service corporations. This appears to be the best method of handling prepayment of hospital costs, and if the law is passed, it is anticipated that the Hospital Association, with the cooperation of the medical profession, will form a non-profit hospital service corporation and make this type of service generally available over the state.

After a good deal of study, and after tentative development of an unsatisfactory scheme, the Committee worked out and presented for the action of the various county societies a prepayment plan for medical care of the clients of the Farm Security Administration. By eliminating hospitalization from the original plan, and by safeguarding the plan as far as possible from abuses through provision for removal of a client who abused the plan, and through leaving to the physician's judgment the time and number of calls, it is felt that the plan has good prospects of working out satisfactorily. Two counties have taken it up, and two or three more are discussing the matter favorably. It is felt by the committee that, although this is not an ideal scheme, the experience and statistics gathered in a year's experience of the complete control of a fairly large group of rural patients will be of great value in the future if it becomes necessary to develop further plans for the prepayment of medical care by rural groups.

The committee has had numerous letters from physicians of the State Society both criticising and approving various actions taken. We appreciate the interest shown in this phase of the work of the State Society; we have received valuable suggestions which have been used in developing further activities. A still greater interest and activity in these matters at this time by the majority of the physicians of Iowa would be of great benefit to the profession in attempt-

ing to direct the development of the various plans to socialize medicine.

At the request of the House of Delegates at the special meeting held in September, the committee has studied carefully various plans developed over the country by medical societies for prepayment of medical services. After discussion with officers of the Society and members of the Council and committees, it did not seem wise to attempt to pass legislation which would legalize formation of such plans in Iowa at present. The general opinion seemed to be that the county societies, through the action of their committees and individual members, could still provide for necessary medical care for the people without the formation of any insurance or other organization to handle the matter. The study is continuing; material on the various plans is being collected; and if the society so desires, the committee will proceed to prepare material, and when so directed will suggest legislative acts which will legalize the formation of the best possible type of medical care plan.

During the year the committee has attempted to keep the Society informed of its activities through articles published in the State Medical JOURNAL. In addition articles have been published in regard to other items of interest along the line of medical economics, in an attempt to keep the profession informed as to what is happening throughout the country in this field.

The medical relief work in the state has been returned to the control of the counties. Each county society is now carrying out the medical relief program on the basis of individual arrangements with the board of supervisors. The contracts vary greatly, but on the whole have become more adequate. In many counties the county pays all bills on a definite fee schedule agreement, with no limited sum per month, and with no cutting below the accepted fee schedule. In other counties a lump sum for services is paid to the society and payment is made as the society sees fit. The experience of the boards of supervisors under the IERA gave them an insight into the amount of medical work required by relief clients which they had not had before, and they have been more appreciative of the amount of work done by the medical profession in the past, and more willing to pay for the work done at present and in the future. The local development and control of plans for care of the indigent give the best provision of medical services, because of varying conditions in the different counties throughout the state.

There was one change in the personnel of the committee during the year. Due to the work entailed as Councilor for his district, Dr. M. C. Hennessy resigned. In his place Dr. Erskine appointed Dr. C. T. Maxwell of Sioux City, who has shown definite interest in the activities of the committee. In accord with a suggestion made by the House of Delegates, each member of the committee has asked two physicians to assist him in his work. This makes a working committee of fifteen physicians.

All meetings of the committee of five have been attended by at least four members, and the decisions as finally adopted have been the result of study and effort on the part of all members.

Ernest E. Shaw, Chairman

Secretary Parker: I *move* that the report of the Committee on Medical Economics as published in the handbook be accepted.

The motion was seconded.

Dr. Harman: Many of us seriously object to that part which refers to the Farm Security Administration, and I think we have just cause. We who are practicing out in the country, brush up against this thing. Has the morale of the Iowa State Medical Society fallen so low that we must practice for about ten cents on the dollar? Do we want to open the way for future governmental agencies by recommending this thing? I do not say that individually the members of this committee have not worked hard and long, but that does not mean that we should give a blanket approval to everything that they present. I wish to enter a protest as far as the Farm Security Administration part of that report is concerned.

The Speaker: Will you read that part, Dr. Parker?

Secretary Parker: "After a good deal of study, and after tentative development of an unsatisfactory scheme, the committee worked out and presented for the action of the various county societies a prepayment plan for medical care of the clients of the Farm Security Administration. By eliminating hospitalization from the original plan, and by safeguarding the plan as far as possible from abuses through provision for removal of a client who abused the plan, and through leaving to the physician's judgment the time and number of calls, it is felt that the plan has good prospects of working out satisfactorily. Two counties have taken it up, and two or three more are discussing the matter favorably. It is felt by the committee that, although this is not an ideal scheme, the experience and statistics gathered in a year's experience of the complete control of a fairly large group of rural patients will be of great value in the future if it becomes necessary to develop further plans for the prepayment of medical care by rural groups."

Dr. Harman: Mr. Speaker, this was presented to the various county medical societies, and we are thankful we are one county that turned it down one hundred per cent. You men who are practicing in the cities may think this will not involve you, but it will in some way. The scheme as presented is absolutely unworkable. If you take a trip through the Dakotas or down through Oklahoma and confer with the men who have to practice under this plan, you will find out what it means. You cannot make a call on one man for twenty-five cents and expect to collect your full fee from the next one.

The Speaker: Dr. Harman, I think as a matter of courtesy to Dr. Shaw, who is unable to be here

today due to the death of his father, we will defer that report until Thursday morning.

Dr. Harman: I will appreciate that.

The motion to approve the report was withdrawn as was the second.

The Speaker: The Historical Committee, Dr. Bierring. Dr. Bierring is not here. Is any member of that committee present?

REPORT OF THE HISTORICAL COMMITTEE

The Historical Committee has endeavored to collect all available facts concerned with the early periods of medical practice in Iowa. This has comprised mainly the biographic data published as they pertained to the life history of individual physicians, epochal events in medical education, and the remarkable evolutionary accomplishments of scientific medicine during the first hundred years as the same affected Iowa medical history.

A general appeal for historical information to individual members of the State Medical Society did not bring forth a very encouraging response. It must be evident to everyone interested in preserving accurate records of medical history in this state that each year leading practitioners who have played an active part in Iowa medicine during the past fifty years are passing from the scene. Unless we can record historical contributions that they alone can make, this valuable information will be lost for all time.

The committee desires to express its highest appreciation for the constant interest and cooperation of Dr. Jeannette D. Throckmorton, M.D., librarian of the State Medical Library in furthering the effort to make the medical history of Iowa as accurate and comprehensive as possible.

Respectfully submitted,

Frank M. Fuller
John T. McClintock
R. T. Lenaghan
Tom B. Throckmorton
William Jepson
Walter L. Bierring, Chairman

Dr. Hanna: I *move* the adoption of the report.

The motion was seconded, put to a vote and carried.

The Speaker: Woman's Auxiliary Advisory Committee, Dr. Hickenlooper. (Absent.) What is your pleasure with this report?

REPORT OF THE WOMAN'S AUXILIARY ADVISORY COMMITTEE

The Woman's Auxiliary Advisory Committee appreciates the action of the Board of Trustees in making possible a reprint of the Woman's Auxiliary Journal page for each member. It requests that this policy be continued if possible, because of the value of the reprint to the members of the Auxiliary.

It also requests that the Board of Trustees allow the Auxiliary $50.00 to help defray the expense of the annual meeting, as it has in the past. This sum is very helpful and is greatly appreciated.

C. B. Hickenlooper, Chairman

Dr. Fay: I *move* its acceptance.

The motion was seconded, put to a vote and carried.

The Speaker: We have cleaned our slate down to Reports of Committees of the Council. The first report is the Speakers Bureau Committee by Dr. Bush.

Reports of Committees of the Council

REPORT OF THE SPEAKERS BUREAU COMMITTEE

To the Members of the Council:

The many successful endeavors of the Speakers Bureau for the year 1937 in no way overshadowed its numerous and varied accomplishments for the year 1938. During this period, our field of activities was not only far-reaching and extremely beneficial, but it also met with several outstanding changes in organization which were designed specifically to insure pronounced improvement in our future efforts.

Our accomplishments for 1938 can be determined, in a small measure, by the facts and figures which have been compiled throughout the year. At its close, 1938 found 670 physicians in the state enrolled in the sixteen postgraduate and "refresher" courses which the Speakers Bureau conducted during that period. In the spring, the regular postgraduate extension courses which opened in each of the following cities were exceptionally well attended: Council Bluffs, one hundred two; Clinton, thirty-one; Rockwell City, forty-one; Iowa City, eighty-six, and Marshalltown, fifty.

In addition to this instruction, four "refresher" courses in pediatrics and obstetrics were presented through the Social Security funds which are made available to us. The enrollment attained at Clarion was thirty-seven; Storm Lake, thirty-nine; Grinnell, twenty-nine, and Creston, thirty-four. The lecturers on the "refresher" courses were practicing physicians in the state, and members of the faculty of the College of Medicine at Iowa City, to whom the Speakers Bureau is greatly indebted for their unceasing efforts in our behalf.

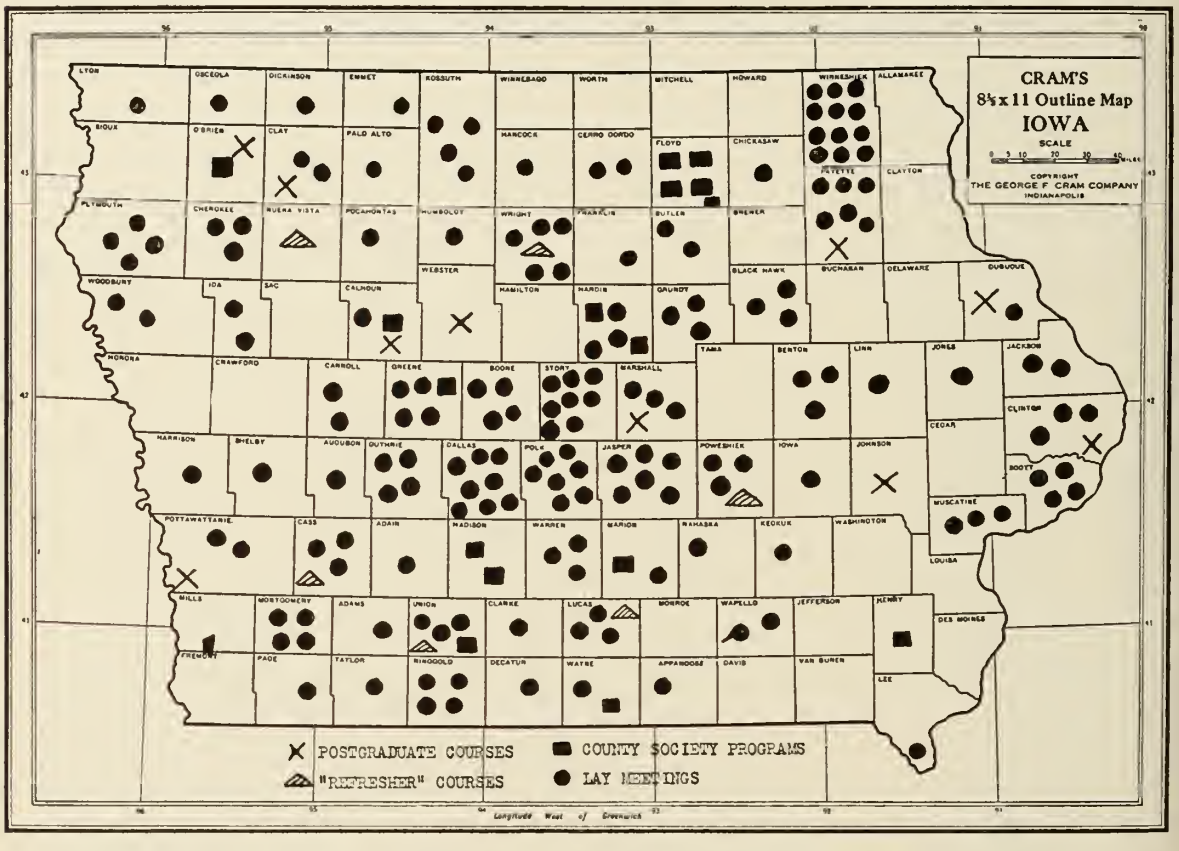
In July, the Council of the Iowa State Medical Society decided upon a new plan for postgraduate medical education in the state. Representatives from each councilor district were appointed by their respective councilors to constitute a Committee on Postgraduate Medical Education. It has been the function of the twenty-eight members of this committee to confer with and assist their fellow colleagues in selecting the type of postgraduate course each district desires. Each committee member was asked to transmit the wishes of his district to the Speakers Bureau after a definite outline for a postgraduate course had been determined. In this way,

it has been possible for the Speakers Bureau to present courses planned by the physicians themselves.

With the inauguration of this plan, the postgraduate courses became regional, and with but few exceptions, registration was open only to those physicians practicing in the district which requested the instruction. In the fall, four such courses were held, two in the Third District at Sheldon and Emmetsburg; one in the Seventh District at Dubuque; one in the Fifth District at Fort Dodge, and one in the First District at West Union. The enrollments in these centers reached twenty-two, thirty-seven, thirty-one, thirty-three, and thirty-one respectively. The course to the physician, rather than require the physician to come to it." The system worked satisfactorily, and forty-six physicians were registered for the lectures. The Ninth District course was held in Chariton, and thirty-two members were enrolled.

Scientific programs for sixteen county society meetings were planned by the Speakers Bureau in 1938. Seventeen physicians participated in these programs.

During the course of the year, one hundred and seventy talks were given to various lay organizations throughout the state. Of this number, forty were given to Parent-Teachers Associations, fifty-three to



in medicine and surgery conducted in West Union was presented entirely by members of the faculty of the College of Medicine in Iowa City, and was considered an exceptional series of lectures by those who attended. General therapeutics courses were held in Sheldon, Emmetsburg, Dubuque and Fort Dodge, and lecturers included not only practicing physicians in the state and members of the faculty of the College of Medicine at the State University, but also outstanding speakers from Omaha, Rochester, Minneapolis and Chicago.

Two "refresher" courses opened in October, one in the Eleventh District and one in the Ninth District. The meetings of the Eleventh District "refresher" course were held in three centers, Atlantic, Red Oak and Harlan, in an endeavor to "take the instruction women's clubs, sixty-five to service clubs, and sixteen to college groups.

Fifty-two radio talks were delivered over WSUI in Iowa City and WOI in Ames in our simultaneous broadcast. The Speakers Bureau furnished copies of these radio talks upon request, and over three hundred fifty radio listeners, in all parts of the middle west, asked us for this material in printed form.

The presentation of the annual Health Essay Contest, sponsored by the Women's Auxiliary to the Iowa State Medical Society, again received the cooperation of the Speakers Bureau. "Highway Hazards" was selected as the subject about which the contestants were to write their essays, and an unusual number of manuscripts were judged.

Late in the summer of 1938, the editors of all news-

papers in Iowa were reminded of our weekly press releases on health which we make available to them. Many complimentary reactions on this service were received, and we are now sending our releases to one hundred fifty-four papers in Iowa. Through a weekly clipping service, we are able to determine how many papers print our articles, and we have shown a steady increase in the publication of our health items. We believe this service has become one of our most beneficial and worthwhile activities.

The accompanying map shows graphically what the Speakers Bureau has accomplished. Practically every section of the state has availed itself of our services. A review of this map makes more apparent the very definite and valuable niche which the Speakers Bureau fills in the activities of the society.

The financial report of the Bureau is given, first for the year 1938, and finally for the entire period of its existence.

Account for 1938

Income

Receipts from postgraduate courses	$ 3,806.42
Travel expense refund	15.00
Received from dues	1,476.00
Total	$ 5,297.42

Expenditures

Salaries	$ 1,290.00
Travel expense for speakers	752.53
Postgraduate course travel expense	1,884.01
Radio talks	101.81
Cancer talks	74.64
Stationery, printing, telephone, etc.	1,312.16
Miscellaneous	78.84
Total	$ 5,493.99
Deficit for 1938	196.57

Total Receipts 1930 Through 1938

1930	$ 2,780.00
1931	3,939.34
1932	2,805.58
1933	4,850.70
1934	5,550.90
1935	6,351.97
1936	4,931.03
1937	4,842.24
1938	5,297.42
Total	$41,349.18

Total Disbursements 1930 Through 1938

1930	$ 306.26
1931	3,949.97
1932	5,855.70
1933	3,744.06
1934	4,316.30
1935	5,435.56
1936	4,360.13
1937	5,741.55
1938	5,493.99
Total	$39,203.52

As previously stated, these facts and figures can show in only a small measure the work which has been done. They cannot illustrate the time and effort which the physicians of the state have expended toward making our work a success.

The field of activity in the Speakers Bureau is wide, yet it can and will grow wider. Changes and improvements have been introduced constantly; there is no limit to where it can go and what it can do. It is not full grown, to be sure, but every year sees it maturing and acquiring a greater number of assets—assets which have been attained by serving to a greater and fuller degree, the laity, the individual physicians and the State Society as a whole.

Earl B. Bush, Chairman
Walter L. Brock
Lester C. Kern
James Dunn
Sydner D. Maiden

Dr. Bush: I *move* that the report as printed in the handbook be accepted.

The motion was seconded, put to a vote and carried.

The Speaker: Cancer Committee, Dr. Plass. (Absent.)

REPORT OF THE CANCER COMMITTEE

The activities of the Cancer Committee during the past year have been similar to those which occupied its attention during 1937.

The Cancer Manual, which has been mentioned in the reports of the committee for the past two years, was finally completed and distributed to the profession of the state during the early part of 1938, shortly before the last meeting of the Society. The Manual has had wide recognition outside Iowa, individual copies having been sent to many other states and to several foreign countries, especially in Latin and South America. Moreover, the state medical societies of Vermont and Delaware purchased sufficient copies to supply one to each physician in their organizations, and the latter group later sent copies to all dentists practicing in the state. The type of the Manual has not yet been broken down, and several other large states are now interested in securing copies for their physicians if and when funds are available for the purpose. Reviewers have been generous in their praise of the volume, and at least one other state, Colorado, has utilized considerable material from the Manual for inclusion in its own publication.

The response from the physicians of Iowa has been far from encouraging. In spite of repeated appeals for financial support for the project, a total of only $292.50 has been received. Small profits from individual and group sales outside the state considerably reduced the indebtedness which the committee had incurred personally. The publishers, the Athens Press of Iowa City, were very generous and did not press for payment; but during the late summer the committee appealed again to the Board of Trustees, who graciously reversed their previous position and paid the balance in full. The committee is inclined to hope that future out-of-state sales will eventually make the project self-supporting.

The committee has continued to support the activities of the Women's Field Army, the executive committee of which is composed of the Executive Cancer Committee together with the Commander of the

Field Army. This interlocking executive leadership is important in assuring the profession of the state that the objectives of the women's organization will complement that of the medical society. Under the present arrangement, our Society retains responsibility for professional cancer education, while the Women's Field Army concerns itself entirely with lay teaching. The latter effort emphasizes the common danger signals of malignant disease and stresses the necessity for early medical examination and treatment. When the program demands medical talks to lay groups, nearby physicians are asked to assume the burden, their necessary expenses being met by the sponsoring organization.

The 1938 Enlistment Campaign was more widely organized and considerably more money was raised than in 1937. The following table indicates the receipts by counties in the various districts:

First district	
Bremer	$17.00
Clayton	39.40
Fayette	12.90
Howard	5.00
Winnishiek	112.00
	$186.30
Second district	
Cerro Gordo	$ 5.00
Kossuth	8.50
	$ 13.50
Third district	
Clay	$ 73.51
Dickinson	66.00
Emmet	36.00
Lyon	127.50
O'Brien	5.00
Osceola	102.60
Sioux	113.30
	$523.91
Fourth district	
Buena Vista	$134.00
Carroll	18.00
Crawford	10.00
Ida	135.00
Plymouth	6.00
Sac	8.00
Woodbury	161.01
	$472.01
Fifth district	
Boone	$ 29.50
Greene	1.50
Story	91.00
Webster	5.00
	$127.00
Sixth district	
Benton	$ 40.49
Black Hawk	226.25
Grundy	15.00
Hardin	36.50
Iowa	5.00
Jasper	5.00
Marshall	14.25
Poweshiek	10.00
Tama	6.00
	$358.49
Seventh district	
Cedar	$ 101.25
Clinton	40.00
Delaware	62.75
Dubuque	717.00
Johnson	566.00
Jones	138.20
Linn	455.26
	$2,080.46
Eighth district	
Jefferson	$ 6.50
Louisa	78.50
Washington	62.10
	$147.10
Ninth district	
Davis	$ 3.00
	$ 3.00
Tenth district	
Adair	$104.00
Adams	57.00
Madison	31.00
Ringgold	65.42
Taylor	55.90
Union	220.00
Warren	50.73
	$584.05
Eleventh district	
Audubon	$ 65.25
Cass	257.80
Fremont	250.65
Harrison	5.00
Mills	247.05
Montgomery	248.31
Page	125.25
Pottawattamie	823.97
Shelby	89.92
	$2,113.20
Miscellaneous	
contribution	65.97
Grand total	$6,674.99

An audit by a public accountant up to July 1, 1938, showed a balance on hand from the 1937 campaign as of that date amounting to $158.12. Receipts and expenditures from July 1, 1938, to December 31, 1938, are indicated below:

RECEIPTS

Balance on hand July 1, 1938 (from 1937 campaign)	$ 158.12	
Refund on advance to districts	21.38	
1938 campaign receipts up to July 1, 1938	6,398.64	
1938 campaign receipts after July 1, 1938	276.35	
Total receipts		$6,854.49

EXPENDITURES

Literature and campaign supplies	$ 300.53	
30 per cent of $6,398.64 to National Society	1,919.59	
Expenses—Commander's office	130.56	
Expenses—Chairman's office	14.46	
District expenses, 1938 campaign	11.22	
Speakers' expenses	5.00	
Letters and literature to contributors	153.67	
Total expenditures		$2,535.03
Balance		$4,319.46

This leaves a balance on hand as of January 1, 1939, of $4,319.46, which is available for the organization of the 1939 campaign and for the educational effort during the spring months.

The larger receipts from the 1938 campaign reflect not only the more effective organization of the hundreds of women involved in the project, who have expended their time and energies, but also an increased appreciation by the profession of the value of such an educational program. Unfortunately, many physicians have not yet informed themselves about the purposes and plans of the Women's Field Army and are inclined to view the effort passively or, in rare instances, actually to oppose it. It seems, therefore, pertinent to reiterate that the Army in Iowa represents this state's participation in the effort of the American Society for the Control of Cancer to educate the lay public on the subject of cancer. Such a campaign costs money for printed material, posters, exhibits, speakers' expenses, etc., and there is no fairy godmother to supply the funds. Consequently, as in other similar efforts for the control of tuberculosis and infantile paralysis, the public is asked to contribute. Thirty per cent of the contributions is forwarded to the national organization in partial reimbursement for its expenses in providing literature, national publicity through newspapers, magazines and radio, and for general administration. The committee believes that in no other project of this character is such a large percentage of the total contributions available for expenditure within the state. The Army has no intention of developing clinics or of arranging for therapy; its sole function is education, and in that rôle it complements the professional activities of this Society. In Iowa, the affairs of the Army are actually under the control of this committee which holds five out of the six places

on the executive committee. During the past two years it has been necessary to utilize considerable money for organizational purposes, as is usual with new efforts of any type, but as this problem is simplified by experience, the campaign can be broadened and should eventually represent a major contribution to the health and welfare of the people of the state.

During the past two years, more than one hundred thousand cancer pamphlets have been distributed, hundreds of cancer talks have been given, dozens of exhibits have been presented, and a large amount of newspaper and radio publicity has been disseminated. It is impossible yet to determine what effect has been produced, although many physicians have volunteered the information that more patients are presenting themselves with early cancer or with symptoms suggesting the disease. It may or may not be significant that in 1937, for the first time since 1925, the total reported cancer deaths for Iowa were below the number for the preceding year. There were 108 fewer deaths among women but 90 more among men, making a net decrease of 18 for the year.

Mrs. M. C. Hennessy of Council Bluffs, who was the 1938 Commander, found it impossible to continue the work and was succeeded in December by Mrs. A. V. O'Brien of Iowa City. Mrs. H. C. Houghton, Jr., of Red Oak, has been named Deputy Commander, and Vice-Commanders have been appointed in all but two districts, the First and the Ninth. The committee again expresses its gratitude to the many women who have helped in the work and especially to those who have assumed leadership in various capacities, and its appreciation of the assistance so gladly offered by the many physicians who have responded to calls for speakers.

The Speakers Bureau has continued to cooperate by arranging for single lectures and for courses on cancer in many county societies. It is believed that such efforts inevitably make the profession better able to meet its increased responsibilities incident to the developing lay awareness of cancer as a disease which can frequently be cured in its earlier stages by employment of the best available intensive treatment.

Cancer is primarily a medical problem, since its diagnosis and proper treatment demand the employment of highly specialized technics which our profession alone is trained to use. On the other hand, cancer is everyone's personal problem, because it will eventually kill one in every eight or ten adults now living unless more is done to control its ravages. Education, and then more education, would seem to hold the only answer. The task has only been begun. It must be carried on through the intelligent and sympathetic cooperation of the entire population—the trained medical men and the remainder of the people, the vast lay public.

E. D. Plass, Chairman

Dr. McNamara: Mr. Speaker, I *move* that the report as printed in the handbook be approved.

The motion was seconded, put to a vote and carried.

The Speaker: Memorials and Communications.

President Erskine: "Tennessee Radiological Society in session in Jackson, Tennessee, wishes to express our thanks and acknowledge our indebtedness for allowing the Cancer Committee of the Tennessee State Medical Association to republish the Manual on Cancer prepared by the members of the Cancer Committee of the Iowa State Medical Association."

I am happy to say, as a little supplementary report, especially to the watchdogs of the treasury, that it looks as if we were going to recover our investment. We are now dealing with New York for 13,000 copies and with Illinois for 7,000 copies. If we sell either one of them, we will make a small profit.

The Speaker: Dr. Parker has some communications.

Secretary Parker: I have a resolution to present:

"Whereas, The Seventy-fifth Congress of this United States, in its wisdom, authorized the construction of a building to replace the present Army Medical Library and Museum Building; and

"Whereas, The President of the United States on June 15, 1938, approved said construction; and

"Whereas, No request for the necessary appropriation for said building has yet been presented to the Congress of this United States; therefore, be it

"*Resolved*, By the Iowa State Medical Society, in its Eighty-eighth Annual Session, that the Honorable Harry H. Woodring, Secretary of War, be, and hereby is, respectfully urged to petition the Seventy-sixth Congress for adequate appropriations for construction of a building to replace the present Army Medical Library and Museum Building; and be it

"*Further Resolved*, That the Committee on Public Policy and Legislation of the Iowa State Medical Society be instructed to present copies of this resolution to the President of the United States, the Secretary of War, the Director of the Budget, the Surgeon General of the Army, and the members of the Iowa Congressional delegation; and be it

"*Further Resolved*, That the Committee on Public Policy and Legislation of the Iowa State Medical Society be, and hereby is, authorized to continue to exercise the influence of this body in behalf of this objective until said appropriation has been provided."

I *move* the adoption, Mr. Speaker.

The motion was seconded, put to a vote and carried.

The Speaker: Is there any new business to come before the House?

Dr. Suchomel: I have two resolutions to present. The first one is:

"Whereas, Dr. William E. Owen, a member of the Linn County Medical Society, has been engaged in the practice of medicine for fifty years, and has always conducted himself and his practice in an ethical manner; therefore be it

"*Resolved*, That the Linn County Medical Society, through its representatives to the House of Delegates of the Iowa State Medical Society, request that Dr. William E. Owen of Cedar Rapids, Iowa, be enrolled upon the records of the Iowa State Medical Society as a Life Member."

I *move* the adoption of the resolution.

The motion was seconded, put to a vote and carried.

The Speaker: The action just taken will be contingent upon receipt of his dues for 1939.

Dr. Suchomel: About two months ago one of our members brought a copy of the Gannett article on socialized medicine, with the suggestion that it be taken to the editor of our local newspaper and portions of it printed, even as a paid ad. Consequently a committee met with our editor and he said, "It is old stuff. Why don't you get something new and up to the minute, and we will print it for you?"

With that answer, the following resolution was adopted at the Linn County Medical Society meeting on March 30:

"Whereas, There is a flood of propaganda being released to the press of this country by private and governmental agencies advocating overthrow of the present methods of furnishing medical service to the people of this country and for the institution of socialized medicine in various forms;

"Whereas, We believe, by far and large, the American people would be better satisfied with present methods if they were aware of the drawbacks of socialized medicine, and

"Whereas, No definite, systematic program of public enlightenment has been carried out, or even attempted, by the officers of the American Medical Association, in order to counteract the effects of this insidious propaganda; therefore, be it

"*Resolved*, That the Linn County Medical Society, through its representatives to the House of Delegates of the Iowa State Medical Society, seek such action, through appropriate committees and the delegates to the American Medical Association, as will supply the state and county medical societies with up to the minute press releases as will serve the best interests of organized medicine, and be it

"*Further resolved*, That a copy of this resolution be presented to the House of Delegates of the Iowa State Medical Society at its annual meeting at Des Moines, Iowa, April 25 to 27, 1939."

Mr. Speaker, I *move* that this resolution be referred to the Committee on Public Policy and Legislation.

The motion was seconded, put to a vote and carried.

Dr. Reed: I would like to read the following communication:

"Gentlemen: The Decatur County Medical Society at its regular session in December, 1938, respectfully submits the name of one of its most faithful members, Dr. H. M. Hills, of Lamoni, Iowa, for life membership in the Iowa State Medical Society subject to action of the House of Delegates at its regular meeting April 25 to 27, 1939.

Respectfully submitted,
Elmo E. Gamet, M.D., Pres.
M. W. Rogers, M.D., Sec'y"

The Speaker: Has this man been in good standing in your society for five years?

Dr. Reed: For many years; I understand for something like twenty-five or thirty years.

The Speaker: Gentlemen, what is your pleasure with this?

Secretary Parker: We find that he is not in good standing. One of the requirements of the By-Laws is that he be in good standing and be recommended by the county medical society.

The Speaker: Might I ask the Trustees if they are charitably inclined? Here is a brother who is financially embarrassed. Do you wish to pay his dues for this year so that he may get a life membership?

Dr. Fay: Does the House recommend it?

Upon motion regularly made and seconded, it was voted that the Trustees be asked to pay the dues of Dr. Hills in order that he might be made a Life Member.

Dr. Risk: I want to present the name of Dr. G. N. Wassom of Fayette County who was elected a Life Member at our last meeting. He is in good standing.

Secretary Parker: I so *move*, Mr. Speaker.

The motion was seconded, put to a vote and carried.

Dr. Heald: I wish to present the name of Dr. William Pfannebecker of Keokuk County. He has been a member for forty years or more and is now in good standing.

Secretary Parker: I so *move*, Mr. Speaker.

The motion was seconded, put to a vote and carried.

Dr. Trueblood: I would like to present the name of Dr. Rose Butterfield of Indianola for life membership.

Secretary Parker: I so *move*, Mr. Speaker.

The motion was seconded, put to a vote and carried.

Dr. Downing: I bring the following recommendation from the Des Moines Academy of Medicine and Polk County Medical Society: "The Council of this Society instructs you to recommend to the House of Delegates of the Iowa State Medical Society at its 1939 Annual Session that life membership be granted to Dr. William O. Smouse."

Upon motion regularly made and seconded, it was voted that life membership be conferred on Dr. Smouse.

Dr. Banton: I wish to present the names of Dr. J. B. Miner, Sr., and Dr. A. F. Kober of Charles City for life membership.

Upon motion regularly made and seconded, it was voted that life membership be conferred on Drs. Miner and Kober.

Secretary Parker: I wish to propose for life membership, Dr. Zenella N. Morris. She is seventy-four years old and has a fractured hip. The application is signed by the entire membership of Van Buren county. I so *move*.

The motion was seconded, put to a vote and carried.

Secretary Parker: We have a petition from Cedar County requesting life membership for Dr. W. H. Jenks who is an invalid and is in California. I *move* that he be granted life membership.

The motion was seconded, put to a vote and carried.

The Speaker: Any other business to come before this group? If not, I will entertain a motion to adjourn.

The Secretary: Before we adjourn, I want to an-

nounce the poll of the House. There is a total of 93 votes.

The Speaker: The delegates from each of the councilor districts will caucus and select one of their members to serve on the Nominating Committee and report at this desk the name of the member from your councilor district who is placed on the Nominating Committee.

The various districts proceeded to caucus, and the following were named to constitute the Nominating Committee: Drs. Howard Risk, C. H. Cretzmeyer, W. R. Brock, A. C. Starry. E. T. Warren, J. C. Hill, D. C. Conzett, J. T. Hanna, J. C. Donahue, G. W. Rimel and E. A. Moore.

The meeting recessed at six o'clock, to reconvene at seven-thirty o'clock Thursday morning.

Thursday Morning, April 27, 1939

The second session convened at seven-forty o'clock, Speaker Hennessy presiding.

The Speaker: The first order of business is the roll call.

Secretary Parker: Mr. Speaker, I would like to request the delegate or alternate, as I name the county, to stand and designate whether he is a delegate or alternate. That will expedite matters.

The Secretary called the roll.

Delegates

Appanoose	J. C. Donahue
Black Hawk	E. E. Magee
Boone	A. B. Deering
Bremer	L. C. Kern
Buchanan	H. A. Householder
Butler	Bruce Ensley
Cerro Gordo	H. D. Fallows
Chickasaw	P. E. Gardner
Clarke	C. R. Harken
Clayton	W. J. McGrath
Dallas-Guthrie	E. T. Warren
Davis	C. H. Cronk
Decatur	G. P. Reed
Des Moines	J. T. Hanna
Dubuque	D. C. Conzett
Emmet	O. H. Miller
Floyd	O. H. Banton
Fremont	Kenneth Murchison
Henry	W. A. Sternberg
Jackson	E. A. Hanske
Jefferson	H. E. Graber
Johnson	G. C. Albright
Lee	B. J. Dierker
Linn	T. F. Suchomel
Linn	J. K. von Lackum
Marion	C. S. Cornell
Marshall	A. D. Woods
Mills	D. W. Harman
Monona	E. C. Junger
Monroe	T. A. Moran
Muscatine	L. C. Howe
O'Brien	W. R. Brock
Plymouth	W. J. Brunner
Polk	N. Boyd Anderson
Polk	W. E. Baker
Polk	J. A. Downing
Polk	L. F. Hill
Polk	Fred Moore
Pottawattamie	F. E. Bellinger
Ringgold	E. J. Watson
Sac	L. B. Amick
Scott	Geo. Braunlich
Shelby	E. A. Moore
Story	W. B. Armstrong
Taylor	G. W. Rimel
Warren	C. A. Trueblood
Washington	W. L. Alcorn
Wayne	B. S. Walker
Woodbury	C. P. McHugh
Wright	R. D. Bernard

Alternates

Clinton	H. A. Amesbury
Dickinson	T. L. Ward
Jasper	J. C. Hill
Johnson	R. J. Prentiss
Johnson	Ralph Heeren
Lyon	F. B. O'Leary
Palo Alto	G. H. Keeney
Scott	R. E. Peck
Wapello	E. B. Hoeven

State Society Officers

President	A. W. Erskine
President-elect	F. A. Hennessy
Vice President	W. C. Goenne
Secretary	R. L. Parker
Treasurer	H. J. McCoy
Trustee	O. J. Fay
Trustee	J. I. Marker
Trustee	L. R. Woodward
Councilor	L. L. Carr
Councilor	C. H. Cretzmeyer
Councilor	J. E. Reeder
Councilor	E. B. Bush
Councilor	F. P. McNamara
Councilor	C. A. Boice
Councilor	H. A. Spilman
Councilor	M. C. Hennessy
Councilor	C. W. Ellyson

Secretary Parker: The House as seated consists of 50 delegates, 9 alternates and 17 officers, making a total of 76.

The Speaker: The next order of business is the reading of the minutes.

The Secretary read the abstracted minutes of the session held on Tuesday afternoon.

The Speaker: You have heard the minutes, gentlemen. What is your pleasure?

Dr. Boice: I *move* they be accepted.

The motion was seconded, put to a vote and carried.

The Speaker: The next is the report of the Committee on Nominations.

Dr. Donahue: The Nominating Committee met at ten a. m., Wednesday morning, April 26, in the Fort Des Moines Hotel. Dr. Howard Risk was elected chairman and Dr. J. C. Donahue secretary. All members except Dr. E. A. Moore were present. After due deliberation and consideration, the committee begs leave to present the following names as candidates:

For President-Elect: F. P. McNamara, Dubuque; W. C. Goenne, Davenport; C. B. Luginbuhl, Des Moines.

For First Vice President: E. A. Moore, Harlan.

For Second Vice President: Fred M. Smith, Iowa City.

For Secretary: Robert L. Parker, Des Moines.

For Treasurer: H. J. McCoy, Des Moines.

For Trustee: John I. Marker, Davenport.

For Councilor, Third District: F. P. Winkler, Sibley.

For Councilor, Eighth District: C. A. Boice, Washington.

For Delegate to American Medical Association: Fred Moore, Des Moines.

For Alternate to American Medical Association: W. A. Sternberg, Mount Pleasant.

For Convention, 1940: Burlington.

The Speaker: This report, I believe, does not require any acceptance because you may nominate from the floor if you wish. I would like to appoint as tellers, Drs. A. D. Woods and T. Frank Hersch. Is there anyone here who wishes to make nominations from the floor? We will vote first for President-Elect.

President Erskine: Mr. Speaker, I should like a ruling from the Chair. Am I entitled to a vote?

The Speaker: According to the Constitution and By-Laws, Dr. Erskine is entitled to vote under one condition, that is in case of a tie vote.

President Erskine: Mr. Speaker, am I allowed to make motions in the House?

The Speaker: You are a member of this House.

President Erskine: I *move*, sir, that the ambiguity in the By-Laws in reference to whether the Speaker of the House or the President casts the deciding vote in case of a tie be referred to the Committee on Constitution and By-Laws for its attention in the ensuing year.

The motion was seconded.

Dr. Albright: I would like to amend the motion that this report be handed in during this session so that the initial step may be taken now, with the final vote a year from now.

The motion to amend the motion was seconded, put to a vote and carried.

The Speaker: We will now vote on the original motion. Those in favor say "aye"; contrary "no." *It is carried.*

The members proceeded to cast their ballots for President-Elect.

The Speaker: While we are waiting a few minutes, I am going to ask Dr. Bierring to introduce one of our guests.

Dr. Bierring: Mr. Speaker, it is always an honor and a privilege to have as one of our guest speakers the President of our parent association, particularly when he represents to us the highest type of medical scholarship and medical attainments. It is therefore a great pleasure to introduce to you one whom you already know so well, Dr. Irvin Abell, President of the American Medical Association.

Dr. Abell spoke briefly to the assembly, while the tellers proceeded to tally the votes.

The Speaker: Gentlemen, the vote was as follows: F. P. McNamara, 45 votes; W. C. Goenne, 18 votes; C. B. Luginbuhl, 14 votes.

President-Elect McNamara: I wish to thank the House for this honor which it has conferred upon me. In due time I hope to fulfill the duties of the president of this great Society. Note that I say "in due time" because some of my friends, as they urged me to accept the nomination, stated that in eighty-eight years Dubuque has had the presidency four times, and all of those president are dead. (Laughter and applause.) Mr. Speaker, the honor conferred on me makes it necessary for me to resign from the Council.

The Speaker: What is your pleasure with this resignation?

Dr. Spilman: I *move* it be accepted.

The motion was seconded, put to a vote and carried.

The Speaker: Will the Nominating Committee act on this resignation?

Dr. Suchomel: I *move*, on that portion of the report of the Nominating Committee down to and not including the recommendation for meeting place, that the By-Laws be suspended and the Speaker be instructed to cast a unanimous ballot for the balance of the officers of the Iowa State Medical Society.

The motion was seconded, put to a vote, and carried.

Secretary Parker: Mr. Speaker, we have had urgent invitations to come to the following cities: Dubuque, Davenport, Marshalltown, and you will always have an invitation to come back home to Des Moines.

Dr. Braunlich: As far as Davenport is concerned, we are out of it. We are all in favor of Burlington. The invitation of Davenport, if it was ever made, is withdrawn.

Dr. Woods: As a delegate from Marshalltown, I did not know anything about the invitation to meet there, so I think that is out.

The Speaker: Davenport and Marshalltown are out.

Dr. Moore: I *move* that this convention come back to Des Moines next year.

The motion was seconded.

Dr. Braunlich: I rise to a point of order. The Nominating Committee has recommended Burlington. I think it is up to us to vote on Burlington.

The Speaker: There is a little doubt in your Speaker's mind as to the rights and prerogatives of the Nominating Committee to select the place of the convention. I believe it is the duty of this group, and I will rule that the House of Delegates determines the location of the next convention by ballot.

Dr. Donahue: In defense of the Nominating Committee, we appreciate the fact that we do not name the convention city but are requested to make suggestions to this House of Delegates.

The Speaker: I will read Section 2 of Chapter V, Election of Officers: "On the first day of the annual session, there shall be selected a Committee on Nominations consisting of eleven delegates, one from each councilor district. Such committee shall be selected by the delegates of each councilor district in separate caucuses. It shall be the duty of this committee to consult with the members of the Society and to hold one or more meetings at which the interests of the Society and the profession of the state for the ensuing year shall be carefully considered. The committee shall report the result of its deliberations to the House of Delegates in the shape of a ticket containing the names of three members for the office of President-Elect and one member for each of the other

offices to be filled at that annual election. Two candidates for President-Elect shall not be named from the same county." I based my ruling on that section.

After considerable discussion the House voted on the motion with the following results: For Des Moines, 46; for Burlington, 28. *The motion was carried.*

The Speaker: The meeting will be held during the second week in May unless those dates conflict with the meeting dates of the American Medical Association. We are ready for the report of the Nominating Committee on the vacancy in the seventh councilor district, Dr. Donahue.

Dr. Donahue: Mr. Speaker, the Nominating Committee wishes to present the name of Dr. H. A. Householder of Winthrop (Buchanan County) as councilor for the seventh district.

The Speaker: You have heard the report of the Nominating Committee on this vacancy. What is your pleasure?

Dr. Boice: I *move* the acceptance of the report.

The motion was seconded, put to a vote and carried.

The Speaker: Dr. Householder, will you take a bow?

Dr. Householder: Gentlemen, I thank you for the honor.

Dr. Albright: I rise for information. Does the report of a Nominating Committee upon an officer constitute election by the House of Delegates? Does the acceptance of the report by the Nominating Committee constitute an election?

The Speaker: No.

Dr. Albright: I *move* that the vote of the House of Delegates be cast for Dr. Householder as councilor from the seventh district.

The motion was seconded, put to a vote and carried.

The Speaker: We are ready for the report of the Medical Economics Committee, Dr. Shaw.

Dr. Shaw: Mr. Speaker, before making the supplementary report, I *move* the acceptance of the committee report as printed in the handbook.

Dr. Harman: This came up the other day when Dr. Shaw was not present. I wish to repeat what I said the other day. Obviously, this body can do one of two things. It can either accept or reject this report. Practically all of the report, I feel, is acceptable to this body, but a part of it certainly is not. This has been amply demonstrated throughout the state by various constituent medical societies, county societies, who have turned down this obnoxious plan. It should be obvious that this body should not and cannot accept the report in full. It is not necessary, nor have we the time to go into the details of this undesirable plan. There are so many things that will not work and are not for the benefit of progressive medicine that we cannot afford to accept this report. I *move* therefore, Mr. President, that this report be rejected.

The Speaker: Gentlemen, there is a motion before the House that this report be accepted. Is your motion an amendment to the original motion?

Dr. Harman: I will offer mine as an amendment to the original motion. However, I do not see how you can accept and reject on the same motion.

The Speaker: We will vote on your motion which is to reject; then we will vote on the motion to adopt. Is there a second to the amendment?

The amendment was seconded.

The Speaker: It has been moved and seconded, as an amendment to the original motion, that the report of the Committee on Medical Economics be rejected.

Dr. Albright: Mr. President, according to Robert's Rules of Order, when two motions conflict, the second motion must be a substitute motion, not an amendment.

The Speaker: We will consider it as a substitute motion.

Dr. Hill (Newton): On the amendment, might I suggest that the doctor refer particularly to the sections of the report to which he objects?

Dr. Harman: It is that paragraph in the report of the Medical Economics Committee referring to the Farm Security Administration. (The fifth paragraph.) I do not think it is necessary to give a detailed explanation of this plan. You are entirely familiar with it. Furthermore, I also wish to censure the unholy publicity this plan has been given through the editorials in the Des Moines Register, presumably at the request of or with the permission, at least, of this body. If there ever was a step made toward state medicine, this is it.

Dr. Donahue: I rise to a point of information, Mr. Speaker. The time is getting short. We could expedite matters by having someone make a motion or an amendment that we accept all of the report except that portion to which the doctor objects.

The Speaker: May I ask you, Dr. Shaw, to withdraw your motion?

Dr. Shaw: *I will withdraw the motion,* if I may be privileged to make a few remarks.

The Speaker: We are going to vote on the substitute motion of Dr. Harman, that we reject the report of the Medical Economics Committee.

Dr. Donahue: Mr. Speaker, I *amend* that motion to read that we accept all of the report except that portion which deals with the Farm Security Administration.

Dr. Hill: *I second it.*

Dr. Harman: I will accept that. If it is necessary, I will withdraw mine in favor of this one.

Dr. Shaw: I merely want to make a remark. We are a committee of this House of Delegates, and whatever it says is all right. There is no personal animosity in this. I want to give the background. If you will look in the October, 1938, issue of the Journal of the Iowa State Medical Society at the minutes of the special meeting of the House of Delegates held last fall in this room, you will find that a motion was passed (it was accepted from Webster County Society) requesting our committee to prepare and present to the legislature and have passed, if possible, a bill which would authorize the provision of prepayment medical care for the low income group for the whole state. That was the action of this

House of Delegates. Our committee was requested to do that. If we had done what we had been asked to do by this group, I do not know what the answer would have been, since one little plan has caused this much trouble. The second point is that at another time another motion was made suggesting that the Medical Economics Committee prepare and present for trial in a few counties, as a medical experiment, a prepayment scheme for some groups of people. Dr. Charlie Hennessy moved that such plans should be prepared by our committee and be presented to each county medical society for its acceptance or rejection. The work on this Farm Security Administration plan has been done at the request of this House of Delegates and not by the Medical Economics Committe on its own initiative. We were requested by this body to proceed and prepare not only what we did, but, in addition, a statewide scheme for prepayment medical care for everybody in the state under a certain income, the income not being stated.

Dr. Harman mentioned the Dakota plans. They were thrown out by our committee. We formulated a plan which left participation to the county society. Our committee is not attempting to force anything on you, but we are attempting to carry out the mandates of this House. I am telling you this to clear the record. I have been called many names. That is all right. There are some doctors who believe we must go ahead with plans if we are to forestall state medicine. This is also the feeling of our committee and some of the county medical societies.

Dr. Sternberg: We realize the sincerity of the committee and of Dr. Shaw, regardless of the names applied to him. I think we should give this another year's trial, and I think we should vote for Dr. Donahue's motion.

Dr. Harman: Look at the Dakotas and Oklahoma and see what has happened.

Dr. Albright: This is not the Dakota plan, nor a plan that has been tried any place. This is a plan to care for the low income group. It is an attempt to formulate a plan to forestall the attack of socialized medicine. This represents the first attempt in Iowa at this type of thing, and we should prove or disprove its worth by actual practice or experiment. In our county we have fifty farm families eligible for this plan. We think our county society should set the fee for their care, and those doctors who wish may participate. I think Dr. Harman is confusing this with plans for care of the indigent. No doctor need participate unless he wishes. Our society has gone on record as supporting the plan of the Medical Economics Committee. We cannot be accused of doing nothing.

Dr. M. C. Hennessy: I was a member of the Medical Economics Committee when the Farm Security Administration was the Rural Rehabilitation Administration. We were approached with many plans while I was on the committee, and we staved them off for two or three years. I do not think the Committee should be censured for this. There are many people who need this kind of thing. I do believe the county medical society should have the right to decide whether or not it wants to participate in the program. However, I think this Farm Security Administration report should be accepted.

Dr. Reeder: I agree with Dr. Hennessy that the county society should have the responsibility for taking over the work. We have a good many families in Woodbury county. The rural physicians, sixteen of them, will handle the work. They changed the plan somewhat and we will try it out for a year. We have lost nothing in so doing, and we can act as an experimental laboratory. I think the plan should be tried for a year.

Dr. Hill: I was on the Medical Economics Committee when this thing first came up, and I met workers of the Rural Rehabilitation Administration. We had a lot of arguments. It is my feeling that since there are five or six different plans for care on a national scale, and since this is a plan adapted to the needs in our state, we should experiment with it for a year. I think we are justified in studying this proposition. The problem of rehabilitaton does not come every year. These families get back on their own feet.

Dr. Thornton: May we ask Dr. Abell to give us a few remarks.

The Speaker: Dr. Abell, would you care to address us now, or would you prefer to wait and discuss this in your address before the general session?

Dr. Abell: I should prefer to wait until the general session.

Dr. Albright: I *move* as a substitute motion that the report of the Medical Economics Committee be accepted as it appears in the handbook.

The motion was seconded.

Dr. Harman: I think this simply means that we approve all the report. We would be far better off to give free care than to carry on with this plan. We are practicing medicine for about one-half of what we were four or five years ago. If this continues, we will have other groups wanting the same service.

The Speaker read from the minutes of the October meeting the section instructing the Medical Economics Committee to formulate plans for care of the low income groups.

The Speaker: It has been demonstrated that the county medical societies have the right to accept or reject the plan. I think your point is well made, Dr. Harman, but I do not know how to remedy it.

Dr. Woods: Is it good policy for this House to accept or oppose something before it is tried out?

The question was called for.

The Speaker: You have heard the substitute motion by Dr. Albright. All in favor signify by raising their hands. Those opposed. The tellers report that there were 22 votes for the motion and 36 against it. *The substitute motion is lost.* We will now vote on Dr. Donahue's motion. Those in favor signify by the usual sign. *The motion is carried.*

Dr. Shaw: I was asked to cooperate with the

hospital insurance company. Two weeks ago we had a meeting with members of the Iowa Hospital Association to draw up plans. The Iowa Hospital Association is meeting in Cedar Rapids this week. I have here a telegram from that body in which they advise us that they have decided to form a non-profit insurance company, and ask us to cooperate. We had no difficulty in getting the hospitals to eliminate x-ray service from their plans. I think it would be a good plan for every doctor to take out a policy in this company as soon as it is organized, and so help get the thing started.

The Speaker: Are there any more reports?

Dr. Moore: You have been advised of the legislation that has been passed by this General Assembly. We obtained most of the things we were interested in. Your Committee on Public Policy and Legislation was specifically directed to bring to you a resolution pertaining to the Wagner bill recently introduced in Congress. I will read you the resolution which we have prepared:

Whereas, S. 1620 (Wagner Bill) of the Seventy-sixth Congress, entitled the National Health Act, in that part pertaining to Maternal and Child Welfare, gives the Children's Bureau as a federal administration agency such broad powers:

1. In rules and regulations;
2. In setting up undefined advisory councils for participating states; and
3. In determining amount of funds needed after 1942 without limit; and

Whereas, The Act makes specific provision for construction of new hospitals and treatment centers up to $158,000,000 within three years; and

Whereas, The Act does not provide any method or means of determining needs for development of the various services; and

Whereas, The Act makes no provision for use of existing unused hospital and treatment facilities; and

Whereas, State programs for medical care under this Act are subject only to the approval of the Social Security Board; and

Whereas, The Act provides that the Social Security Board shall set up advisory Board for states whose personnel and responsibility are not defined; and

Whereas, The Act makes no specific distinction between medical care for the indigent as compared with that for self-sustaining people except to stress the need for those in "severe economic distress"; and

Whereas, the implications and interpretation of the Act with reference to compulsory health insurance under supervision of governmental units are not clear;

Therefore, Be It Resolved by the Iowa State Medical Society that S. 1620 will not promote the public interest in economics or health, and

Be It Further Resolved that the Committee on Public Policy and Legislation of the Iowa State Medical Society shall request members of Congress from Iowa to obtain modification of the Bill in accordance with previously declared policies of the American Medical Association and the Iowa State Medical Society, and in event of failure in that, to oppose the Act, and

Be It Further Resolved, that the delegates to the American Medical Association present copies of this resolution to that body, with the request that the American Medical Association use its utmost influence in this manner.

Dr. Moore: I *move* the adoption of this resolution.

The motion was seconded, put to a vote and carried.

Dr. Hennessy: I want to remark on the report of the Committee on Child Health and Protection and to move we reconsider our approval of its report. We as medical men object to the state offering medical services. In turn we do not think we can afford to approve a plan taking away any man's business. Section D of the plan states that the State Department of Health will furnish the preventive agents without cost. I do not think we have any right to recommend that the State Department of Health take away the druggist's business in this manner. I think we should have an opinion from the Iowa Pharmaceutical Association before supporting this plan. It is the principle which concerns me. If I am not out of order I would like to *move* that we reconsider the motion made the other day and remove our approval of Section D.

Dr. Hanna: I agree we should not take away a man's business. This is a public health matter, and the drugs are bought in large quantities, probably from the same firms which sell to the druggists.

Dr. L. F. Hill: Dr. Hayek is here and I think he has an answer to Dr. Hennessy's motion. May he have the floor?

Dr. Hill's request was granted and Dr. Hayek was given the floor.

Dr. Hayek: There is some provision made in this program for a return to the druggist. The local druggist can act as distributing agent for the drug house. He gets ten per cent for handling the drugs for us.

Dr. Hennessy: That is what I wanted to know. *I withdraw my motion.*

Dr. Bierring: I want to make some remarks about your action on the Wagner Bill. The Bill will be taken up for hearings in the next two weeks. I think your Senator and Congressmen will appreciate hearing your attitude. The United States Public Health officers unanimously adopted a resolution disapproving of the Wagner Bill, and unanimously approving the first, second, third and fifth portions of the National Health Program as approved by the House of Delegates of the American Medical Association. The resolution will be written soon and given to the legislators. The health officers are on record that no health program shall be instituted in any state that does not have the full approval of the state and county medical societies.

Dr. McCoy: I *move* that the House of Delegates authorize the president to appoint two or more oculists, members of the State Society, to act in con-

junction with, or under the direction of, the Medical Economics Committee, to formulate policies and working relations between the oculists of the state and the Social Welfare Board and the Division of Aid to the Blind. This was recommended by the Eye, Ear, Nose and Throat section.

The motion was seconded, put to a vote and carried.

Dr. Bernard: I want to call your attention to the fact that the success of your legislative committee is largely due to members of the profession in the legislature. I think we should extend them our thanks.

Secretary Parker: I have two more requests for life membership. One is for Dr. Milton Daily of Sioux City. The Woodbury County delegate tells me the county will see that his dues are paid so that he will be eligible for life membership. I *move* Dr. Daily be granted life membership upon payment of his current dues.

The motion was seconded, put to a vote and carried.

Secretary Parker: I also have a request that life membership be granted to Dr. Thomas G. Walker of Riceville. He is now a member in good standing. I *move* that the request be granted.

The motion was seconded, put to a vote and carried.

The Speaker: Linn County introduced a resolution at our last meeting in regard to publicity.

Dr. Moore: I believe this requires no action, because it is covered by an action of the House of Delegates made last October.

Dr. Bierring: Pneumonia control is a new requirement of any public health program. It must have the complete cooperation of all physicians of the state. The State Department of Health would like to have the sanction of this House on the appointment of a Committee on Pneumonia Control. We are entering a new phase of the problem. Various questions have been raised, and this committee should be a valuable addition to any control program.

Dr. Bernard: I *move* that a Committee on Pneumonia Control, consisting of five members, be appointed.

Dr. Sternberg: I think this is a good thing, if Dr. Bernard will incorporate in his motion that this be a committee of five, headed by Dr. Fred Smith.

Dr. Bernard accepted the suggestion, and the *motion was seconded, put to a vote and carried.*

The Speaker: I am to appoint a committee to investigate the issuance of licenses and the employment by the state of non-licensed physicians. I will name Dr. F. M. Fuller of Keokuk, chairman. The other two members will be Dr. M. C. Hennessy of Council Bluffs and Dr. E. E. Magee of Waterloo.

Secretary Parker: I wish to read you the names of committee members for the coming year. They are as follows:

STANDING COMMITTEES OF THE HOUSE OF DELEGATES

Committee on Constitution and By-Laws

John H. Henkin, Chairman.....Sioux City
W. L. Alcorn.....Washington
Bush Houston.....Nevada

Committee on Finance

Ernest C. McClure, Chairman.....Bussey
H. A. Tolliver.....Charles City
A. S. Bowers.....Orient

Committee on Medical Economics

Ernest E. Shaw, Chairman.....Indianola
Thomas F. Thornton.....Waterloo
Charles T. Maxwell.....Sioux City
H. M. Ivins.....Cedar Rapids
A. C. Moerke.....Burlington

Committee on Medical Education and Hospitals

Jack V. Treynor, Chairman.....Council Bluffs
T. F. Hersch.....Cedar Rapids
Con. R. Harken.....Osceola

Medicolegal Committee

Frank A. Ely, Chairman.....Des Moines
George C. Albright.....Iowa City
Corwin S. Cornell.....Knoxville

Committee on Public Policy and Legislation

Fred Moore, Chairman.....Des Moines
Ransom D. Bernard.....Clarion
Lawrence A. Taylor.....Ottumwa
Felix A. Hennessy.....Calmar
Robert L. Parker.....Des Moines

SPECIAL COMMITTEES OF THE HOUSE OF DELEGATES

Baldridge-Beye Memorial Committee

Julius S. Weingart, Chairman.....Des Moines
Emerson B. Dawson.....Fort Dodge
Willis M. Fowler.....Iowa City

Committee on Child Health and Protection

H. E. Farnsworth, Chairman.....Storm Lake
R. H. McBride.....Sioux City
E. D. Plass.....Iowa City
H. A. Weis.....Davenport
C. P. Phillips.....Muscatine
Roland Stahr.....Fort Dodge
Lee F. Hill.....Des Moines

Fracture Committee

Donald C. Conzett, Chairman.....Dubuque
Fred L. Knowles.....Fort Dodge
Arch F. O'Donoghue.....Sioux City
K. R. Kerndorff.....Council Bluffs
W. E. Wolcott.....Des Moines
Douglas N. Gibson.....Des Moines
William G. Bessmer.....Davenport

Historical Committee

Walter L. Bierring, Chairman.....Des Moines
J. T. McClintock.....Iowa City
T. B. Throckmorton.....Des Moines
Frank M. Fuller.....Keokuk
Wm. Jepson.....Sioux City

Medical Library Committee

Jeannette Dean-Throckmorton, Chairman.....Des Moines
A. J. Joynt.....Waterloo
W. S. Greenleaf.....Atlantic

Military Affairs Committee

Leonard A. West, Chairman.....Des Moines
F. E. Bellinger.....Council Bluffs
Harold E. Graber, Secretary.....Fairfield

Public Relations Committee

H. E. Stroy, Chairman.....Osceola
C. C. Collester.....Spencer
C. L. Bain.....Corning

Committee on Scientific Exhibits

Lewis M. Overton, Chairman.....Des Moines
Fred H. Lamb.....Davenport
Allen C. Starry.....Sioux City

Woman's Auxiliary Advisory Committee

C. B. Hickenlooper, Chairman.....Winterset
John G. DeBey.....Orange City
James C. Hill.....Newton
F. K. Burnett.....Clarinda

I *move* that the committees as recommended by the incoming president be approved by the House.

The motion was seconded, put to a vote and carried.

The Speaker: I should like to give you the names of the section chairmen for next year's meeting. I have asked Dr. Philip C. Jeans of Iowa City to serve as chairman of the medical section; Dr. Frank E. Bellinger of Council Bluffs, as chairman of the surgical section, and Dr. Edwin Cobb of Marshalltown, as chairman of the eye, ear, nose and throat section. A motion for adjournment is now in order.

Motion was made, seconded and carried, and the meeting adjourned at 10:00 a. m.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Board of Trustees June 20, 1939

The Board of Trustees of the Iowa State Medical Society met in the central office Tuesday, June 20, at 1:00 p. m. Those present included the three trustees, Doctors Fay, Marker, and Woodward; the president and president-elect, Doctors F. A. Hennessy and F. P. McNamara; Robert L. Parker, secretary; H. J. McCoy, treasurer; Lee F. Hill, editor; and Fred Moore.

Business transacted was as follows: (1) Dr. Fay elected chairman for the year; (2) Minutes of previous meeting read and approved; (3) Bills authorized; (4) Dr. Hill appointed editor for 1939-1940; (5) Salaries of officers and office personnel fixed for 1939-1940; (6) Publication of roster of members in good standing in July Journal approved; (7) Payment of fees on bonds of secretary and treasurer authorized; (8) Publication of 1937 Baldridge-Beye Memorial essay approved; (9) Provision of material to 4-H Club leaders discussed but no final action taken; (10) Executive secretary asked to procure bids on printing revised Constitution and By-laws; (11) Check from Iowa Hospital Association offered as reimbursement for legislative expense incurred was ordered returned to Iowa Hospital Association; (12) Report from Committee on Child Health and Protection discussed, but no definite action taken.

Meeting adjourned at 3:30 p. m.

Meeting of the Program Committee June 20, 1939

The Program Committee of the Iowa State Medical Society met in the central office Tuesday, June 20, at 3:45 p. m. Those present were Doctors F. A. Hennessy, F. P. McNamara, R. L. Parker, H. J. McCoy of the Committee on Scientific Work; and the section chairmen Doctors P. C. Jeans of Iowa City, F. E. Bellinger of Council Bluffs, and Edwin Cobb of Marshalltown.

Tentative plans for the 1940 annual meeting were discussed; an outline of the general sessions was made; and section chairmen were instructed to write guest speakers of their choice.

Committee adjourned at 5:00 p. m.

SPEAKERS BUREAU RADIO SCHEDULE

WSUI—Tuesdays at 3:00 p. m.

WOI—Wednesdays at 2:15 p. m.

July 4 Water Hazards, Thomas L. Ward, M.D.

July 11 Heat Stroke and Heat Exhaustion, J. E. McFarland, M.D.

July 18 Summer Complaints in Children, R. H. McBride, M.D.

July 25 Care of the Baby in Summer, Preston E. Gibson, M.D.

Aug. 4 Poliomyelitis, H. E. Farnsworth, M.D.

PREVALENCE OF DISEASE

	May '39	Apr. '39	May '38	Most Cases Reported From
Diphtheria	10	37	11	Black Hawk
Scarlet Fever	376	545	435	Polk, Black Hawk, Mills
Typhoid Fever	20	2	10	Clinton, Polk
Smallpox	167	200	121	Scott, Henry, Polk
Measles	851	900	1300	Montgomery, Floyd, Dubuque
Whooping Cough	90	52	154	Cedar
Cerebrospinal Meningitis	1	1	1	Howard
Chickenpox	322	242	284	Dubuque, Linn, Woodbury
Mumps	185	182	129	(For State)
Influenza	13	282	8	(For State)
Poliomyelitis	0	1	3	(For State)
Tuberculosis (Pulmonary)	67	84	94	(For State)
Undulant Fever	22	2	6	(For State)
Gonorrhea	128	92	159	(For State)
Syphilis	237	238	258	(For State)

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—MRS. EDWARD A. HANSKE, Bellevue
President Elect—MRS. ELBERT T. WARREN, Stuart
Secretary—MRS. WALTER J. CONNELL, Dubuque
Treasurer—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

THE PRESIDENT'S REPORT

It was my pleasure and privilege, as President of the Woman's Auxiliary to the Iowa State Medical Society and a member of the National Board, to attend the Seventeenth Annual Convention of the Woman's Auxiliary to the American Medical Association in St. Louis, May 15 to May 19, 1939.

The pleasure consisted of participating in the many entertainments provided for the auxiliary members and guests by the St. Louis Auxiliary under the able chairman, Mrs. Willard Bartlett, Sr., and her committee. The drives, teas, breakfasts, luncheons, dinners and receptions were beautifully arranged. The privilege consisted of taking part in the business sessions, meeting our new national president, Mrs. Rollo K. Packard, and becoming acquainted with the national officers from all parts of the country.

Mrs. Tomlinson's address and report were most interesting, and if a lack of interest has crept into state auxiliaries, her words of encouragement cannot help but stimulate the enthusiasm necessary to meet the objective of our organization. Many new members have been added to the 20,000 reported last year. May I hope that Iowa will feel this impetus and join the procession? To illustrate the great interest shown toward the auxiliary one need only refer to the registration of more than 1,500 women at the St. Louis convention.

Dr. Rock Sleyster, president of the American Medical Association, in addressing the auxiliary at its annual luncheon, said, "Doctors' wives must share the burden of a doctor's service to humanity." With socialized medicine at our front door, it is apparent, when the final analysis is made, that public opinion will determine the future action of our government. Misleading statements have placed the practice of medicine before the public in a confused state, and it is imperative for the wives of 112,000 physicians in the United States to become informed on this issue, and meet the arguments in an intelligent manner.

The technical Exposition and the Scientific Exhibit at the Municipal Auditorium were without a doubt the greatest exhibits of scientific knowledge ever displayed in any country in the world. One could not view this exhibit, even as a doctor's wife, without feeling that the scientific advancement which has taken place in medicine during the last decade, will make this earth a better place in which to live. Each year new discoveries are added, and this year's outstanding contribution, as judged by the doctors themselves, was made by our own Iowa physicians, Drs. Elmer L. DeGowin and E. D. Plass, and Mr. John E. Harris, of the State University of Iowa, College of Medicine, Iowa City, on the preservation of blood for transfusion. May I extend congratulations to these workers from the Woman's Auxiliary? The Speakers Bureau exhibit attracted much attention, and the Speakers Bureau is to be highly commended for its worthwhile efforts in the field of education.

May I add—if you do not need the auxiliary, remember, the auxiliary needs you.

"Coming together is beginning,
Keeping together is progress,
Thinking together is unity,
Working together is success."

Mrs. E. A. Hanske, President

Jackson County

The annual June meeting of the Jackson County Medical Society and the Woman's Auxiliary was held in Bellevue at Weck's Hotel, Thursday, June 1, to honor Dr. J. C. Dennison of Bellevue, who recently completed fifty years in the practice of medicine.

Dr. F. P. McNamara of Dubuque, president-elect of the Iowa State Medical Society, was present and gave the address of welcome, including also interesting remarks on the recent annual session of the American Medical Association. Mrs. E. A. Hanske paid a glowing tribute in original rhyme to Dr. Dennison, and all members present responded with congratulations. Letters and telegrams were read. Following these Dr. Dennison closed the program with fitting remarks.

Mrs. E. L. Lampe, Secretary

NOTES ON MENTAL HYGIENE NEXT MONTH

The August number of the JOURNAL of the Iowa State Medical Society will carry in this section, notes on a proposed study outline of mental hygiene, and a list of books for supplementary reading, as a service to members of the Woman's Auxiliary. This material has been prepared by Mrs. Russell C. Doolittle of Des Moines, and should prove most worthwhile to county units in planning their programs for the coming year.

SOCIETY PROCEEDINGS

Bremer County

The combined monthly meeting of the Bremer County Medical Society and the staff of Mercy Hospital was held Wednesday, June 28, at the Fortner Hotel in Waverly. The evening's program consisted of a pediatric discussion, conducted by Philip C. Jeans, M.D., of the State University of Iowa, College of Medicine, Iowa City.

O. C. Hardwig, M.D., Secretary

Dubuque County

Recognition of a great accomplishment, the completion of fifty years in the practice of medicine, was accorded Dr. Bernard A. Michel of Dubuque recently. At a dinner given in his honor by the Dubuque County Medical Society on Tuesday, June 20, at Leiser's Gardens, in Dubuque, he was presented with a medal as a token of the respect and admiration of his colleagues. Dr. Donald C. Conzett, who made the presentation, recounted some of the experiences and achievements of Dr. Michel. He has been a member of the county and state medical societies since 1901. He is also a Fellow of the American College of Surgeons. The dinner was well attended by local and visiting physicians. There was no scientific program.

J. J. Mueller, M.D., Secretary

Greene County

The Greene County Medical Society met in regular session at the Greene County Hospital in Jefferson, Thursday, June 8. William F. Mengert, M.D., of the State University of Iowa, College of Medicine, Iowa City, presented an address on The Management of Complicated Labor. An informal round table discussion followed the formal talk.

J. R. Black, M.D., Secretary

Henry County

Lewis M. Overton, M.D., of Des Moines, was guest speaker for the Henry County Medical Society at a meeting held Tuesday, June 6, at the Harlan Hotel. He addressed the group on Common Fractures.

Jasper County

The last meeting of the Jasper County Medical Society before the summer recess was held at the Skiff Memorial Hospital in Newton, Tuesday, June 13. Conan J. Peisen, M.D., of Des Moines, furnished the scientific portion of the program, speaking on Peptic Ulcers.

Linn County Annual Meeting

The Linn County Medical Society held its regular election of officers Thursday, June 15, with the following results: Dr. H. R. Hess, president elect; Dr. W. J. Netolicky, vice president; Dr. E. B. McConkie, secretary; Dr. Emma J. Neal, treasurer; and Drs. T. F. Suchomel and J. K. von Lackum, delegates. Dr. Wayne J. Foster was inducted into the office of president for the coming year.

J. T. Hecker, M.D., Secretary

Marion County

The regular June meeting of the Marion County Medical Society was held in Pella, Thursday, June 15, with the following program: Report of the Annual Session, Corwin S. Cornell, M.D., of Knoxville; A Marion County Tuberculosis Finding Program, C. K. McCarthy, M.D., of the State Department of Health, Des Moines; and Fracture Clinic, C. I. Fox, M.D., and Carl Aschenbrenner, M.D., of Pella.

Sac County

John H. Stalford, M.D., of Sac City, addressed members of the Sac County Medical Society at a meeting of that organization held recently in Odebolt. His topic was Some Observations on Mental Health. L. B. Amick, M.D., also of Sac City, presented two case histories.

PERSONAL MENTION

Dr. Philip C. Jeans, head of the pediatric department, State University of Iowa, College of Medicine, Iowa City, gave a paper on "Photometry and Vitamin A", at the Seventieth Anniversary Celebration of the Boston Children's Hospital, held in Boston, Massachusetts, Friday, June 9.

Dr. Russell M. Wolfe, who was graduated in 1937 from the State University of Iowa, College of Medicine, has returned to Marshalltown to practice ophthalmology, after completing two years special work in the department of ophthalmology at the Montreal General Hospital, Montreal, Canada. He will be associated with his father, Dr. Otis Wolfe and Dr. F. L. Wahrer.

Dr. Lawrence E. Pierson of Sioux City, recently attended the annual meeting of the American Urological Association in White Sulphur Springs, West Virginia, where he read a paper on "Infections of the Ureter".

Dr. Harry P. Smith, professor of pathology, State University of Iowa, College of Medicine, Iowa City, has received a grant of $1,500 from the John and Mary R. Markle Foundation for further studies in blood coagulation and hemorrhagic diseases. This

grant is in addition to one of $10,000 previously awarded for studies in this field.

Dr. **Leonard A. West**, after practicing in Des Moines for the past twelve years, has accepted an appointment as medical officer in the department of surgery at the Veterans Hospital, Bay Pines, Florida, located just outside of St. Petersburg, Florida.

Dr. **James C. Hill** of Newton, Chairman of the Jasper County Tuberculosis Association, presented an illustrated lecture before members of the Newton Federated Business and Professional Women's Club in Newton, Wednesday, May 24. His subject was "The Early Treatment of Tuberculosis."

Dr. **L. L. Corcoran** of Rock Rapids announces the association of his son, Dr. Thomas E. Corcoran, with him in the practice of medicine. He was graduated in 1938 from the State University of Iowa, College of Medicine, and has completed a year's interneship at St. Mary's Hospital in Kansas City, Missouri.

Dr. **E. D. Plass**, head of the department of obstetrics and gynecology, State University of Iowa, College of Medicine, spoke at the annual meeting of the Minnesota State Medical Association in Minneapolis, Thursday, June 1. His subject was "Treatment of Vaginal Discharges."

MARRIAGES

Miss Gertrude Frey and Dr. Ben F. Kilgore, both of Des Moines, were married Saturday, June 10, at the home of the bride's parents, Mr. and Mrs. Martin K. Frey in Eagle Grove. Mrs. Kilgore was graduated from the Iowa Methodist Hospital School of Nursing, and the young couple will be at home in Des Moines, where Dr. Kilgore has been engaged in the practice of medicine for the past five years.

The marriage of Miss Edith Thielen of Elkton, South Dakota, and Dr. Theodore Stuckart of Dubuque, took place Wednesday, June 14 at St. Raphael's Cathedral in Dubuque. The bride is a graduate of the Mercy Hospital Nursing School, Dubuque, where Dr. Stuckart has practiced until last year when he left to take special work in Washington, D. C.

Sunday, June 25, Miss Marie Denkinger of Wayne, Nebraska, and Dr. F. V. Hibbs of Carroll, were married in the First Presbyterian Church in Sioux City. Immediately after the ceremony and reception, Dr. and Mrs. Hibbs left on a western motor trip. They will return to Carroll where Dr. Hibbs has conducted a medical practice for some time.

DEATH NOTICES

Arey, Rodney Melvin, of Muscatine, aged sixty-four, died May 23 of coronary thrombosis after an illness of six weeks. He was graduated in 1914 from the State University of Iowa, College of Medicine, and had long been a member of the Muscatine County Medical Society.

Blunt, Arthur W., of Clinton, aged eighty-four, died June 17 after a six months' illness. He was graduated in 1878 from the Chicago Homeopathic Medical College, and at the time of his death was a member of the Clinton County Medical Society.

Davis, Samuel King, of Libertyville, aged seventy-six, died May 28 after an extended illness. He was graduated in 1888 from the College of Physicians and Surgeons, Keokuk, and at the time of his death was a Life Member of the Jefferson County and Iowa State Medical Societies.

Hearst, George Edward, of Cedar Falls, aged sixty, died June 9 as the result of embolism following an operation. He was graduated in 1904 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Black Hawk County Medical Society.

Mabee, Curtis Oscar, of New Providence, aged eighty-two, died June 20 after an illness of several years. He was graduated in 1888 from Queen's University Faculty of Medicine, Kingston, Ontario, Canada, and had long been a member of the Hardin County Medical Society.

Powers, Fred Willard, of Waterloo, aged seventy-one, died June 16 following a cerebral hemorrhage. He was graduated in 1889 from the State University of Iowa, College of Medicine, and at the time of his death was a Life Member of the Black Hawk County and Iowa State Medical Societies.

Ross, Arthur James, of Perry, aged eighty-two, died June 19 as the result of injuries received in an automobile accident on April 16. He was graduated in 1880 from the College of Physicians and Surgeons, Keokuk, and at the time of his death was a Life Member of the Dallas-Guthrie and Iowa State Medical Societies.

Treynor, Vernon Lawrence, of Council Bluffs, aged seventy-two, died June 12 after a three weeks' illness. He was graduated in 1891 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Pottawattamie County Medical Society. A more complete obituary notice will be found in the History of Medicine section of this issue of the Journal.

History of Medicine in Iowa

Edited by the Historical Committee

Dr. Frank M. Fuller, Keokuk
Dr. John T. McClintock, Iowa City
Dr. R. T. Lenaghan, Clinton
Dr. Tom B. Throckmorton, Des Moines
Dr. Walter L. Bierring, Des Moines
Dr. William Jepson, Sioux City

Vernon Lawrence Treynor, M.D.
1866—1939

The passing of Dr. Vernon L. Treynor, beloved physician of Council Bluffs, Iowa, is mourned not only by his community and his immediate associates in medicine, but by the general medical profession in the state. Dr. Treynor was truly a native Iowan. He was born in Council Bluffs, September 28, 1866, and here he spent forty-nine years in medical service, endearing himself to hundreds of patients. His death occurred June 12, 1939. His active interest in civic affairs, his sympathetic attitude, and his kindly influence cause his death to be an irreparable loss.

Dr. Treynor was graudated in 1891 from the State University of Iowa, College of Medicine. He was a versatile reader and his excellent judgment made him an invaluable member of many boards and committees. He was for many years a member of the University of Iowa Board of Regents. He acted for eleven years as secretary of the Iowa State Medical Society, and also served as its president and on its Board of Trustees. He was one of the organizers of the Council Bluffs Clinic, a member of the staff of the Jennie Edmundson Hospital, president of the Physicians Casualty Association of Omaha, Nebraska, and for some time acted as physician and surgeon for three railroads of Council Bluffs. At the time of his death he was a member of the House of Delegates of the American Medical Association, and contracted his last illness during the annual meeting of that organization in St. Louis.

Dr. Treynor's influence will continue to live on; he has bequeathed two sons to the medical profession; Dr. Jack V. Treynor of Council Bluffs, and Dr. Thomas B. Treynor of Big Rapids, Michigan. His widow also survives. We may say with Tennyson, "The old order changeth, yielding place to new, and God fulfills himself in many ways, Lest one good custom should corrupt the world."

A. A. Johnson, M.D.

An Appreciation

Dr. Vernon L. Treynor was privileged to live in a period that may well be termed the golden age of medical progress and achievement. As a medical student at the University of Iowa, fifty years ago, he caught the gleam of a new era in scientific medicine when bacteriology was pointing the way for the modern conception of wound infection and the control of infectious diseases. Fortunate was any student of medicine to come under the inspiring influence of the great Middleton, cultured physician, scientist and surgeon, as well as Professors Rockwood and Littig who brought the flavor of European laboratories and clinics to direct medical and clinical diagnosis along newer channels.

As an undergraduate Dr. Treynor acquired the impress of sound leadership which characterized his entire professional career. Early in his practice in Council Bluffs he was fortunate to have the guidance and counsel of that noble Scotsman, the elder Dr. Donald MacCrae, a graduate of the University of Edinburgh, and easily the foremost pioneer surgeon and progressive physician in the Missouri Valley. From him, no doubt, Dr. Treynor gained his interest and enthusiasm for medical society organization. He took a prominent part in discussions at the Sioux City session of the Iowa State Medical Society in 1903, when the medical reorganization plan making the county society the unit, was finally adopted. As a member of the House of Delegates during its early period of trial, he exerted a profound influence toward its general acceptance by the Iowa profession. Elected to the

position of secretary of the State Medical Society while still in his thirties, Dr. Treynor brought the best of his talents to this arduous service for a period of eleven years. In 1913 he was chosen for the presidency of the State Society. Later as a member of the Board of Trustees he was able safely to guide the policies of our State Society by reason of his unusual qualifications and background of experience in organizational activities. As a member of the House of Delegates of the American Medical Association he represented the interests of the Iowa profession during these trying years when a changing social order is signally affecting the trend of medical practice. There comes a feeling of sadness when we recall the hearty handclasp in St. Louis, little knowing that it meant farewell to our earthly companionship. It is likewise fitting to recognize his efficient record as a member of the Board of Regents of the State University of Iowa, since it offered the opportunity to direct the destinies of the College of Medicine to accomplish its fullest purpose in the advancement of medical education.

Dr. Treynor's life was truly one of fine accomplishments in the field of medicine and human welfare, of enduring friendships and delightful fellowships, to be faithfully treasured while memory lasts.

Walter L. Bierring, M.D.

AN OFFICIAL TRIBUTE

With the death of Dr. Vernon L. Treynor, the Iowa State Medical Society loses one of its most valuable and conscientious advisors. Few of us, perhaps, realize the many years of service which Dr. Treynor had given to organized medicine. For almost forty years he was officially connected with the development and management of Iowa State Medical Society policies. He was elected secretary in 1901 and held that position until 1913, when he was elevated to the office of president. Soon after that time his services were demanded for the Committee on Constitution and By-laws. From 1926 to 1930, Dr. Treynor was a member of the Board of Trustees, after which he was again named on the Constitution and By-laws Committee. In 1935 he was selected as delegate to the American Medical Association House of Delegates, an office he held up to the time of his death.

The formative years in any organization are important and decisive ones; and the enviable position which the Iowa State Medical Society today occupies is the result of careful planning, judicious foresight and constant attention to details on the part of those early officers of the Society. The fact that Dr. Treynor was retained as a member of this official family for so many years is mute testimony to the esteem in which he was held by his professional colleagues. Each duty and each office was accepted by him with a full knowledge of the responsibilities involved—responsibilities which he sincerely and intelligently assumed.

Without in any way minimizing the personal loss which this death brings to family and friends, may we express our deep appreciation of Dr. Treynor's invaluable assistance, and our sense of loss in being deprived of his discriminating counsel in the crucial days to come.

Oliver J. Fay, M.D.

CHANGE IN ANNUAL SESSION MEETING DATES

By vote of the Executive Council, the date of the 1940 annual session of the Iowa State Medical Society has been changed to May 1, 2 and 3. This change was made to accommodate the Iowa State Dental Society, which plans to act as host to the Iowa Interprofessional Association in 1940. The Iowa State Dental Society is bound by its constitution to meet on the first Monday, Tuesday, and Wednesday of May. This would have meant an overlapping of one day with the meeting of the Iowa State Medical Society as approved by the House of Delegates.

Feeling that this conflict of dates was inadvisable, the Executive Council has voted to move the annual meeting to the preceding week, thus giving both societies undisturbed use of the facilities of the hotel. Members of the Iowa State Medical Society are urged to make a note of this change. The Eighty-ninth Annual Session will be held in Des Moines, May 1, 2 and 3, 1940.

CALL FOR THE CONVENTION FOR THE REVISION OF THE PHARMACOPOEIA

Dr. Walter A. Bastedo, President of the United States Pharmacopoeial Convention, has issued the official call for the convention for the Revision of the Pharmacopoeia to meet in Washington, D. C., on May 14, 1940.

Under the Federal Food, Drug, and Cosmetic Act the standards laid down in the Pharmacopoeia become the legal standards for drugs and preparations. As a consequence the manufacturer is enabled to furnish the pharmacist with officially standardized materials; the pharmacist to dispense, with exactitude, just what the physician desires; and the physician to write his prescriptions in simple terms with confidence in what the pharmacist will dispense. In the past the Committee of Revision has included men of the highest rank in the several fields. That it may continue to do so, it is asked that the various bodies authorized to send delegates to the Convention will appoint their full quota of delegates, and will select these from among those of their own people whom they know to be informed and at the same time prepared to attend the Convention.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

PRINCIPLES AND PRACTICE OF OPHTHALMIC SURGERY—By Edmund B. Spaeth, M.D., associate professor of ophthalmology in the Graduate School of Medicine, University of Pennsylvania. Lea and Febiger, Philadelphia, 1939. Price, $10.00.

GONORRHEA IN THE MALE AND FEMALE—By P. S. Pelouze, M.D., assistant professor of urology, University of Pennsylvania. Third edition, thoroughly revised. W. B. Saunders Company, Philadelphia and London, 1939. Price, $6.00.

THE VAGINAL DIAPHRAGM—By Le Mon Clark, M.D., Chicago. Illustrated. The C. V. Mosby Company, St. Louis, 1939. Price, $2.00.

WHAT IT MEANS TO BE A DOCTOR—By Dwight Anderson. Published by the Public Relations Bureau, Medical Society of the State of New York, 2 East 103rd Street, New York, N. Y., 1939. Price, $1.00.

MENSTRUAL DISORDERS. PATHOLOGY, DIAGNOSIS AND TREATMENT—By C. Frederic Fluhmann, M.D., associate professor of obstetrics and gynecology, Stanford University School of Medicine. San Francisco, California. W. B. Saunders Company, Philadelphia and London, 1939. Price, $5.00.

THE GENUINE WORKS OF HIPPOCRATES—Translated from the Greek by Francis Adams, LL.D., Surgeon. The Williams and Wilkins Company, Baltimore, Maryland, 1939. Price. $3.00.

A TEXTBOOK OF CLINICAL NEUROLOGY—By Israel S. Wechsler, M.D., professor of clinical neurology, Columbia University, New York. Fourth edition, revised. W. B. Saunders Company, Philadelphia and London, 1939. Price, $7.00.

CLINICAL PATHOLOGICAL GYNECOLOGY—By J. Thornwell Witherspoon, M.D., formerly associate professor of experimental and pathological gynecology, Indiana University Medical Center. Lea and Febiger, Philadelphia, 1939. Price, $6.50.

LIFE AND LETTERS OF DR. WILLIAM BEAUMONT—By Jesse S. Myer, M.D., late associate in medicine, Washington University, St. Louis. The C. V. Mosby Company, St. Louis, 1939. Price, $5.00.

CANCER HANDBOOK OF THE TUMOR CLINIC, Stanford University School of Medicine. Edited by Eric Liljencrantz, M.D., chief of the Tumor Clinic. Stanford University Press, Stanford University, California, 1939. Price, $3.00.

HEALTH OFFICERS' MANUAL—By J. C. Geiger, M.D., Dr. P.H., director of the Department of Public Health, City and County of San Francisco, California. W. B. Saunders Company, Philadelphia and London, 1939. Price, $1.50.

PERSONAL AND COMMUNITY HEALTH—By C. E. Turner, A.M., Dr. P.H., professor of biology and public health, Massachusetts Institute of Technology. Fifth edition. The C. V. Mosby Company, St. Louis, 1939. Price, $3.00.

BOOK REVIEWS

HYPERTENSION AND NEPHRITIS

By Arthur M. Fishberg, M.D., associate in medicine, Mount Sinai Hospital, New York, N. Y. Lea and Febiger, Philadelphia, 1939. Price, $7.50.

The reviewer believes this fourth edition can be included as one of the American medical classics. It clearly reveals the modern concepts of nephritis and hypertension, two medical problems which present themselves daily. The volume aggregates and evaluates all the advances in these diseases during the past five years. Simplicity and clarity combine to make the text a revelation of intensive and valuable clinical investigations.

The introductory chapter discusses the pathologic physiology of renal function. A chapter has been added, defining azotemia, its importance and identification. One chapter is devoted entirely to renal function tests, their simple applications and importance. Separate chapters deal with edema and albuminuria, their interrelationships and relative importance.

Arterial hypertension, its pathologic anatomy and pathogenesis, is intensively discussed, and here are included the encephalopathies and retinopathies. Here we find an evaluation of the work of Dr. Goldblatt who has proved a pressor substance in the ischemic kidney. There are several chapters dealing with essential hypertension, its etiology, clinical picture, diagnosis, prognosis, and treatment.

Bright's disease has been given a most modern classification. The various types of nephrosis, and their individual relationships to infections, poisons, etc., are discussed. Three chapters deal intensively with acute and chronic glomerulonephritis, with new conceptions of bacteriology, pathology, diagnosis, and with treatment. There is a chapter which clarifies the various possible renal phenomena that may be associated with subacute bacterial endocarditis. A chapter on the nature and therapy of the toxemias of pregnancy is very interesting, setting forth as it does, the possible importance of pre-existing low-grade kidney pathology.

The reviewer feels that a knowledge of this text is absolutely necessary for the modern practice of medicine, and more particularly that the volume should be an active member in the library of the internist.

J. W. C.

CLINICAL GASTROENTEROLOGY

By Horace Wendell Soper, M.D., St. Louis. The C. V. Mosby Company, St. Louis, 1939. Price, $6.00.

In this book the author has covered briefly a wide variety of subjects which embrace the whole field of gastro-enterology. Chief emphasis has been placed on diagnostic methods, and his discussion of these is very much worthwhile. Treatment of various conditions also is emphasized and the book presents the author's own recommendations as to the best types of treatment. While the treatment of some conditions is a controversial matter, the author presents clearly the reasons for employing the methods he advocates.

The book is very generously supplied with illustrations of the x-ray findings in the various pathologic conditions. There are other interesting illustrations but the x-ray illustrations are particularly complete and valuable. The presentation of the au-

thor's own views on treatment is very helpful, and even though some may be a trifle unique, as is illustrated by his chapter on milk, he presents very good argument and evidence in support of his statements.

Because of its brevity many points have been omitted from the subject matter of this book. However, most of the important subjects have been covered in a concise way. The emphasis has been placed on diagnosis and treatment. Many helpful suggestions in regard to treatment are presented and the text should be of considerable value to anyone engaged in this field of practice. H. C. B.

THE 1938 YEAR BOOK OF EYE, EAR, NOSE AND THROAT

Edited by E. V. L. Brown, M.D., Louis Bothman, M.D., and Samuel J. Crowe, M.D. The Year Book Publishers, Chicago, 1938. Price, $2.50.

This carefully prepared review of the world's literature in this particular field has established its usefulness throughout the years it has been offered to the medical profession. The present number maintains the efficiency and the standards which have been set by previous copies.

The eye, ear, nose and throat are considered in separate sections and this classification permits the physician interested in only one branch to select his reading material without difficulty. The authors, in preparing the condensation from the original articles, do so without changing the original author's viewpoint or conclusions.

When advisable, editorial notes explain or exemplify the text and in many instances reflect the viewpoint of the editor. Voluminous literature in every branch of medicine makes it impossible for the physician to cover all branches of the literature without assistance, and the yearbook offers this assistance by means of its able editorial staff. C. H. C.

SCARLET FEVER

By George F. Dick, M.D., professor of medicine, University of Chicago; and Gladys Henry Dick, M.D. The Year Book Publishers, Chicago, 1938.

For some time now, the pros and cons relative to the efficacy of control of scarlet fever by the newer methods, have been debated on many a medical platform and in many a cloakroom gathering. This small volume of some 140 pages presents the Dicks' side of the argument. The authors, of course, advocate the general use of scarlet fever toxin prophylactically, and the use of antitoxin therapeutically, even in mild cases of the disease. They express the opinion that the therapeutic use of convalescent serum in the small doses usually employed is hardly justifiable. Then follows the surprising statement that, "In order to give a dose equal to the therapeutic dose of antitoxin now on the market, it would be necessary to use 300 to 500 cubic centimeters—" of convalescent serum. Furthermore, arguments supporting the reliability of the Dick test as a means of determining susceptibility to scarlet fever are related in convincing fashion.

However, the book is more than a debate on controversial questions. The experimental work leading up to the establishment of a specific hemolytic streptococcus as the etiologic agent in scarlet fever is described. The pathologic anatomy, symptoms, varieties, complications, diagnosis and prognosis are described and many helpful suggestions to the understanding and management of the disease are included.

In the reviewer's opinion, this book is an up-to-date summarization of the present knowledge of scarlet fever, with the exception, of course, of the new chemotherapy with sulfanilamide. In spite of the fact that this reviewer's clinical experience leads him to disagree with the practicability of some of the authors' recommendations, he feels that the physician who deals with scarlet fever patients will find the volume a valuable source of information.

L. F. H.

THE 1938 YEAR BOOK OF DERMATOLOGY AND SYPHILOLOGY

Edited by Fred Wise, M.D., clinical professor of dermatology and syphilology; and Marion B. Sulzberger, M.D., assistant clinical professor of dermatology and syphilology, New York Postgraduate Medical School and Hospital of Columbia University. The Year Book Publishers, Chicago, 1939. Price, $3.00.

The 1938 Year Book presents a resumé of 545 critically chosen articles gleaned from the various clinical periodicals. The editors have featured several important dermatologic subjects, notably fungus affections and allergy. At the beginning of the volume they have contributed a full length article entitled "Modern Treatment of Common Fungus Affections". The most recent literature on eczema and industrial dermatoses has been reviewed. The increasing importance of vitaminology and endocrinology is recognized, as evidenced by the generous space devoted to them. The chapter on drug eruptions includes the complications arising from treatment with sulfanilamide, the arsenicals, bismuth compounds, iodides, barbiturates, etc.

The close relationship of dermatology with internal medicine is emphasized in chapters on hematogenous dermatoses, syphilis and allergy.

While this book is written primarily for the physician who desires a time saving method of keeping up with the progress in the important field of dermatology, its chapters on experimental and investigative studies, together with the case analyses taken from the literature, are extremely valuable to the specialist. J. W. Y.

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Gibbon, William H., Sioux City
Gibson, Chelsea D., Lake View
Gibson, Douglas N., Des Moines
Gibson, Paul E., Des Moines
Gibson, Preston E., Davenport
Giffin, John S., Waterloo
Gifford, Albert K.. Cedar Rapids
Gilbert, Alfred E., Los Angeles, California
Gilbert, Ralph H., Iowa City
Giles, George C., Oakland
Gilfillan, Bruce L., Keokuk
Gilfillan, Earl E., Pulaski
Gilfillan, George W., Bloomfield
Gilfillan, Homer J., Cantril
Gillespie, Chauncey M., Garden Grove
Gillespie, Hamilton S., Sioux City
Gillett, Francis A., Oskaloosa
Gillies, Carl L., Iowa City
Gillmor, Benjamin F., Red Oak
Gingles, Earl E., Onawa
Gittins, Thomas R., Sioux City
Gittler, Ludwig, Fairfield
Givens, Hezekiah F., West Bend
Glasscock, Thomas J., Hawarden
Glesne, Orvin G., Monona
Glesne, Otto N., Fort Dodge
Glew, Percival B., Dallas Center
Gleysteen, Dierk J., Alton
Gloeckler, Bernhard B., Mt. Pleasant
Glomset, Daniel J.. Des Moines
Glynn, Charles E., Davenport*
Goad, Robley R., Muscatine
Goen, Edwin J., Manchester
Goenne, William C., Davenport
Goggin, John G., Ossian
Goldberg, Louie, Des Moines
Goodenow, Sidney B., Colo
Goodman, Jonathan N., Wood, Wisconsin
Goodrich, Joseph A., Des Moines
Gordon, Arnold M., Des Moines
Gorrell, Ralph L., Clarion
Gottlieb, Jacques S., Iowa City
Gottsch, Erwin J., Shenandoah
Gould, George R.. Conrad
Gould, Isaac L., Kellogg
Gower, Walter E., Pocahontas
Graber, Harold E., Fairfield
Graening, Charles H., Waverly (L.M.)
Graening, Paulus K., Waverly
Graham, George W., Collins
Graham, James W., Sioux City
Gran, Albert G., Storm Lake
Grant, Cecil C., Cedar Falls
Grant, John G., Ames
Grant, Raymond E., Volga City
Grau, Amandus H., Denison
Gray, Henry A., Keokuk
Gray, Howard D., Des Moines
Gray, Ralph E., Eldora
Gray, Samuel T., Albia (L.M.)
Grayston, Jesse T., Cedar Rapids
Greene, James A., Iowa City
Greenleaf, William S., Atlantic
Greenlee, Max R., Oskaloosa
Griffin, Clark C., Jr., Vinton (L.M.)
Griffin, Frank L., Baldwin
Griffin, John M., Des Moines
Griffin, Sarah M. F., Manson
Grimm, Peter G., Spirit Lake
Groman, August, Odebolt (L.M.)
Grossman, Edward B., Orange City
Grossman, Milton, Sioux City
Grossman, Raymond S., Marshalltown
Grothaus, Dell L.. Delta
Grove, Emil G., Boone
Grubb, Merrill W., Galva
Gunn, Ross E., Boone
Gurau, Henry H., Des Moines
Gutch, Roy C., Chariton
Hagedorn, Harry H., Sioux City*
Hagen, Edward F., Decorah
Hahn, James P., Sioux City
Haines, Diedrich J., Des Moines
Haisch, Lily K., Dubuque
Haisch, Otto E., Dubuque
Hale, Albert E., Dougherty
Hale, William H., Iowa City
Hall, Bonnybel A., Maynard
Hall, Cluley C., Maynard
Halloran, William H., Audubon
Halpin, Lawrence J., Cedar Rapids
Hamilton, Benjamin C., Jefferson (L.M.)
Hamilton, Benjamin C., Jr., Jefferson
Hamilton, Cecil V., Garner
Hamilton, Harriett S.. Council Bluffs
Hamilton, Henry H., Cedar Rapids
Hamilton, William F., Marshalltown
Hammer, Marion R., Newton (L.M.)
Hamstreet, Wilbur F., Titonka
Hanchett, W. McMicken. Council Bluffs
Hancock, John C., Dubuque

Hand, William C., Hartley
Hands, Sidney G., Davenport
Hankey, Daniel C., Council Bluffs
Hanna, John T., Burlington
Hansell, William, Ottumwa (L.M.)
Hansell, William W., Des Moines
Hansen, Fred A., Stanton
Hansen, Niels M., Des Moines
Hansen, Robert R., Marshalltown
Hanske, Edward A., Bellevue
Hanson, Frank H., Magnolia
Hanson, Laurence C., Jefferson
Hanson, Russell R., Storm Lake
Hardin, John F., Bedford
Hardwig, Oswald C., Waverly
Harken, Conreid R., Osceola
Harkness, Gordon F., Davenport
Harman, Dean W., Glenwood
Harnagel, Edward J., Des Moines
Harp, John F., Prairie City (L.M.)
Harpel, Kate S., Boone
Harper, Edna K. Sexsmith, Greenfield
Harper, James A., Greenfield*
Harriman, Walter F., Sioux City
Harrington, Arlan F., Cedar Rapids
Harrington, Raymond J., Sioux City
Harris, Clinton E., Grinnell
Harris, Grove W., Marshalltown
Harris, Herbert H., Battle Creek
Harrison, Glenn E., Mason City
Hart, William E., Odebolt
Hartje, Harry F., Adair
Hartley, Byron D., Mt. Pleasant
Hartman, Frank T., Waterloo (L.M.)
Hartman, Howard J., Waterloo
Hartung, Walter, Iowa City
Hasek, Victor H., Cedar Rapids
Hastings, John C., Elma
Haugen, Albert I., Ames
Haumeder, Hans, New Hampton
Haumeder, Maria E., New Hampton
Havlik, Aloysius J., Tama
Hawkins, Emmet L., Council Bluffs
Hawley, Olin B., Corning
Hay, William E., Avoca
Hayek, John M., Des Moines
Haygood, Marvin F., Des Moines
Haymond, Harold E., Perry
Hayne, Willard W., Iowa City
Hazard, Charles M., Arlington
Hazard, Theodore L., Iowa City
Heady, Conda C. C., Bloomfield (L.M.)
Heald, Clarence L., Sigourney
Healy, Maurice A., Boone
Healy, Maurice J., Boone
Hearst, George E., Cedar Falls*
Heathman, Frank E., Pocahontas
Hecker, Frederick A., Ottumwa
Hecker, John T., Cedar Rapids
Hedgecock, Lewis E., Hampton
Heeren, Ralph H., Iowa City
Heetland, Louis H., Sibley
Heffernan, Chauncey E., Sioux City
Heilman, Ernest S., Ida Grove (L.M.)
Heles. John B., Dubuque
Helgesen, Peter A., Lake Mills
Heller, Theodore A., Fort Madison
Henderson, Lauren J., Cedar Falls
Henderson, Walker B., Oelwein
Hendrickson, Alvin H., Sioux City
Henely, Edmund, Nora Springs
Henkin, John H., Sioux City
Henneger, William A., Dubuque
Hennes, Raphael J., Oxford
Hennessy, Felix A., Calmar
Hennessy, J. Donald, Council Bluffs
Hennessy, Maurice C., Council Bluffs
Henning, Garold G., Milford
Henry, Clyde A., Farson
Henry, Hiram B., Des Moines
Henry, Rex V., Hedrick
Herman, John C., Traer
Hermence, George E., Marshalltown
Hermsen, Paul J., Bronson
Herny, Peter M., Prairie City
Herrick, Thomas G., Gilmore City
Herrmann, Christian H., Jr., Amana
Herron, David A., Alta
Hersch, Thomas F., Cedar Rapids
Hersey, Nelson L., Independence
Hesbacher, Edward N., Des Moines
Hess, Howard R., Cedar Rapids
Hess, William C., Cresco
Heusinkveld, Henry J., Jr., Clinton
Hibbe, Henry B., Dubuque
Hibbs, Fred V., Carroll
Hickenlooper, Carl B., Winterset
Hickman, Charles S., Centerville
Hicks, Wayland K., Sioux City
Hight, William B., Des Moines
Hill, Chalmers A., Council Bluffs
Hill, Christine S. E., Council Bluffs
Hill, James C., Newton
Hill, James W., Mt. Ayr.
Hill, Julia F., Pittsburgh, Pennsylvania
Hill, Lee F., Des Moines
Hills, Henry M., Lamoni (L.M.)
Hills, Robert A., Russell
Hinchliff, James, Minburn
Hinrichs, Robert G., Manson
Hobart, Francis W., Lake City
Hoegen, Joseph A., Wyoming
Hoeven, Edward B., Ottumwa
Hoffman, Paul M., Tipton
Hoffmann, Alfred A., Waterloo
Hofmann, William P., Davenport
Hofstetter, George, Clinton (L.M.)
Hogle, William M., Keokuk
Holbrook, Francis R., Des Moines
Hollis, Edward L., Marengo
Holman, Henry D., Mason City
Holtey, Joseph W., Ossian
Homan, Leo J., Riverside
Hombach, Walter P., Council Bluffs
Hombach, William P., Council Bluffs
Hommel, Placido R. V., Elkader
Honke, Edward M., Sioux City
Hooper, Lester E., Indianola
Hope, Frank G., Sioux City
Hopkins, David H., Glidden
Hornaday, William R., Des Moines
Horton, Vincent J., Calmar
Hosford, Horace F., Burlington
Hospodarsky, Leonard J., Ridgeway
Hotz, Edward J., Strawberry Point
Houghton, Fred W., Council Bluffs
Houghton, Henry S., Peiping, China
Houlahan, Jay E., Mason City
Houlihan, Francis W., Ackley
Houlihan, Thomas J., Ida Grove (L.M.)
Householder, Harold A., Winthrop
Houser, Cass T., Cedar Rapids
Houston, Bush, Nevada
Hovenden, John H., Laurens
Howar, Bruce F., Jewell
Howard, Fred H., Strawberry Point
Howard, Lloyd G., Council Bluffs
Howard, William H., Decorah
Howe, James M., Hillsboro
Howe, Lysle C., Muscatine
Howell, Chauncey W., Grinnell
Howell, Elias B., Ottumwa
Howland, Charles F., Des Moines
Hubbard, Frank A., Columbus Junction
Hudek, Joseph W., Garnavillo
Hudgel, Lawrence E., North Platte, Nebr.
Hudson, Jessie B., Sheffield
Hughes, Robert O., Ottumwa
Hull, Henry C., Jr., Washington (L.M.)
Hully, Henry D., Griswold
Huntoon, Gardner A., Des Moines
Hurd, Charles A., Northwood
Hurevitz, Hyman M., Davenport
Huston, Daniel F., Burlington
Huston, Herbert M., Ruthven
Huston, Samuel W., Mt. Pleasant
Hutchinson, Eleanor M., Belle Plaine
Hyatt, Charles N., Jr., Humeston
Hyatt, Charles N., Sr., Albia (L.M.)
Hyndman, Olan R., Iowa City
Ihle, Charles W., Cleghorn
Ingham, Paul G., Mapleton
Ingraham, David R., Sewal
Irish, Thomas J., Forest City
Irwin, Charles E., Woodward
Isenberg, Bertice A., Lohrville
Ivins, Harry M., Cedar Rapids
Jackson, James M., Jefferson
Jackson, Robert L., Iowa City
Jacobsen, Robert A., Exira
Jaenicke, Kurt, Clinton
James, Audra D., Des Moines
James, David W., Kamrar
James, Lora D., Fairfield
James, Peter E., Elkhorn
James, Roger A., Allison
Jameson, Robert E., Davenport
Janse, Phillip V., Algona
Jardine, George A., New Virginia
Jarvis, Fred Jackson, Iowa City
Jarvis, Fred J., Oskaloosa
Jarvis, Harry D., Chariton
Jay, Leon D., Waverly
Jeans, Philip C., Iowa City
Jeffries, Roy R., Waukon
Jenkins, George A., Albia
Jenkins, George D., Burlington
Jenkinson, Ernest A., Sioux City (L.M.)
Jenkinson, Harry R., Iowa City
Jenks, Alonzo L., Jr., Des Moines
Jenks, William H., Pasadena, California, (L.M.)
Jensen, Arnold L., Council Bluffs
Jensen, Arthur E., Humboldt
Jensen, LeRoy E., Audubon
Jepson, William, Sioux City (L.M.)
Jerdee, Ingebrecht C., Clermont
Jessup, Parke M., Muscatine
Jinderlee, Joseph W., Cresco
Johann, Albert E., Des Moines
Johnson, Aaron Q., Sioux City
Johnson, Albert P., Sigourney (L.M.)
Johnson, Aldis A., Council Bluffs
Johnson, Chester H., Cherokee
Johnson, Clarence A., Larimore, N. D.
Johnson, George M., Marshalltown
Johnson, Glenn R., Ottumwa
Johnson, Harvey A., Atlantic
Johnson, J. A. William, Newton
Johnson, Jonathan, Alden
Johnson, Melvin T., Lake Mills
Johnson, Robert J., Iowa Falls
Johnson, William A., Alden
Johnston, C. Harlan, Des Moines
Johnston, Florence D., Cedar Rapids
Johnston, George B., Estherville
Johnston, Harry L., Ames
Johnston, Helen, Des Moines
Johnston, Howard H., Hampton
Johnston, Kenneth L., Oskaloosa
Johnston, Thomas H., Spencer
Johnston, Wayne A., Dubuque
Johnstone, Alexander A., Keokuk
Jones, Cecil C., Des Moines
Jones, Charles L., Gilmore City
Jones, Clare C., Spencer
Jones, Harry J., Cedar Rapids
Jones, Henry D., Schleswig
Jones, Jesse I., Manchester
Jones, Lewis H., Wall Lake (L.M.)
Jones, Mark C., Boone
Jones, Thomas S., Waukee
Jongewaard, Albert J., Jefferson
Jongewaard, Jeannette, Jefferson
Jordan, Carl F., Des Moines
Jordan, John W., Maquoketa
Jowett, John R., Clinton
Joynt, Albert J., Waterloo
Joynt, Martin J., Le Mars
Joynt, Michael F., Marcus
Judd, Addison L., Kanawha (L.M.)
Junger, Emil C., Soldier
Kaack, Harry A., Clinton
Kabrick, Ola A., Grandview
Kadel, Merl A., Tipton
Kahler, James E., Des Moines
Kane, Thomas E., Boone
Kaplan, David, Sioux City
Kas, Thomas D., Sutherland
Kassmeyer, John C., Dubuque
Kast, Donald H., Des Moines
Katherman, Charles A., Sioux City
Katz, Louis J., Fayette
Kauffman, William A., Marshalltown
Kaufman, Cloid E., Tyrone, New Mexico
Kaufman, Ernest L., Fort Atkinson
Keane, John L., Dyersville
Keech, Roy K., Cedar Rapids

Keefe, Frank M., Clinton
Keeffe, Patrick E., Sioux City
Keen, Burlin E., Des Moines
Keeney, George H., Mallard
Keettel, William C., Jr., Iowa City
Keith, John J., Marion
Keller, Robert S., Chariton
Kelley, Edmund J., Des Moines
Kelley, Laurence E., Des Moines
Kellogg, Orson A., Dows
Kelly, Dennis H., Des Moines
Kelly, Harry D., Council Bluffs
Kelly, Joseph I., Burlington (L.M.)
Kelsall, H. Irwin, Osceola
Kenefick, John N., Algona
Kennedy, Charles S., Logan
Kennedy, Edward M., New Hampton
Kennedy, Edward P., Swaledale
Kennedy, Elizabeth S., Oelwein
Kennedy, William C., Somers
Kepler, Earl C., Greene
Kern, Lester C., Waverly
Kerr, H. Dabney, Iowa City
Kerr, Johnston H., Akron
Kerr, William, Randolph
Kerr, William H., Hamburg
Kershner, Frank O., Clinton
Kersten, Ernest M., Fort Dodge
Kerwick, Joseph M., New Hampton
Kessel, George, Cresco (L.M.)
Kessell, James E., Des Moines
Kessler, John B., Cedar Rapids (L.M.)
Kestel, John L., Waterloo
Kettelkamp, Enoch G., Monona
Keyser, Ralph E., Marshalltown
Kieck, Ernest G., Cedar Rapids
Kiesau, Frederick W., Postville
Kiesau, Milton F., Postville
Kiesling, Harry F., Lehigh
Kilgore, Benjamin F., Des Moines
Kimball, John E., West Liberty
Kimberly, Lester W., Iowa City
King, David H., Batavia
King, Dean H., Spencer
King, Harold N., Washington, D. C.
King, Oran W., Des Moines
King, Ross C., Clinton
Kingsbury, Earl L., Keokuk
Kinnaman, Joseph H., Peoria, Illinois
Kirch, Walter A. W., Des Moines
Kirkegaard, Smith C., Ringsted
Kitson, Walter W., Atlantic
Klein, John L., Muscatine (L.M.)
Klein, John L., Jr., Muscatine
Kleinberg, Henry E., Des Moines
Kline, Samuel, Sioux City
Kluever, Herman C., Fort Dodge
Knight, Benjamin L., Cedar Rapids
Knight, Edson C., Garwin
Knight, Russell A., Rockford
Knipe, James B., Armstrong
Knipfer, Robert L., Jesup
Knoll, Albert H., Dubuque
Knopf, Eugene J., Hubbard
Knott, Peirce D., Sioux City
Knott, Robert C., Sioux City
Knowles, Fred L., Fort Dodge
Knox, James M., Cedar Rapids
Knudsen, Hubert K., Clinton
Kober, Augustus F., Charles City
Koch, Fred E., Burlington
Koch, George W., Sioux City (L.M.)
Koeneman, Eugene O., Eldora
Koob, William R., Brayton
Kooiker, Clarence J., Fremont
Kooiker, Herman J., Hull
Koontz, Lyle W., Vinton
Korfmacher, Edwin S., Grinnell
Kornder, Louis H., Davenport
Korns, Horace M., Iowa City
Koser, Donald C., Cherokee
Kottke, Elmer E., Des Moines
Koziol, Edward S., St. Helens, Oregon
Krause, Charles S., Cedar Rapids
Krejsa, Oldrich, Cedar Rapids
Krenning, Katherine S., Davenport
Krepelka, George E., Osage
Kreul, Dwight G., Davenport
Kriebs, Frank J., Elkport (L.M.)
Kriechbaum, Horace T., Davenport
Krigsten, Joe M., Sioux City
Kruckenberg, William G., Mt. Vernon
Kruse, Henry W., Rockford
Kubela, Louis F., Chelsea
Kuhl, Augustus B., Jr., Davenport
Kuhl, Augustus B., Sr., Davenport
Kuhn, Leo C., Decorah
Kuitert, John H. Glenwood
Kulp, Raymond R., Davenport
Kuntz, George S., Sibley
Kyle, William S., Washington
Labagh, Nicholas W., Mystic
Lacey, Thomas B., Glenwood
Ladage, Leo H., Davenport
Ladd, Fred G., Cedar Rapids
La Force, Edward F., Burlington (L.M.)
Laidley, Wallace G., Ogden
Laird, John W., Mt. Pleasant
Lall, Shiam, Des Moines
Lamb, Frederick H., Davenport
Lamb, Harry H., Davenport
Lambach, Frederick, Davenport (L.M.)
Lambert, Avery E., (Ph.D.), Iowa City
Lampe, Elmer L., Bellevue
Lande, Jacob N., Sioux City
Langan, Joseph C., Clinton
Langford, William R., Epworth
Langworthy, Henry G., Dubuque
Lannon, James W., Clear Lake
Lapsley, Robert M., Keokuk
Larimer, Robert N., Sioux City
Larsen, Elmer A., Centerville
Larsen, Harold T., Fort Dodge
Larson, Eloise M., Iowa City
Larson, Lester E., Decorah
Larson, Marvin O., Hawarden
Lashbrook, Elam E., Estherville
Launder, Frank T., Garwin
Launder, Lloyd H., Marshalltown
Leahy, Paul E., Sioux City
Lease, Nimrod J., Crawfordsville (L.M.)
Lee, Frank W., Osage
Lee, Gisle M., Thompson (L.M.)
Leehey, Florance P., Oelwein
Leehey, Paul J., Independence
Leffert, Frank B., Centerville
Lehman, Emery W., Des Moines
Leighton, Isaac W., Iowa City
Leighton, Lewis L., Fort Dodge
Leik, Donald W., Dubuque
Leinbach, Samuel P., Belmond
Leinfelder, Placidus J., Iowa City
Leir, Charles N. O., Des Moines (L.M.)
Leith, George G., Wilton Junction
Lekwa, Alfred H., Story City
Lenaghan, Robert T., Clinton
Lenzmeier, Albert J., Davenport
Leonard, Bertram B., Jr., Anthon
Leonard, Earl R., Lake Park
Leonard, Frederick S., Dubuque
Leserman, Lester K., Rolfe
Lessenger, Ernest J., New London
Lessenger, William S., Mt. Pleasant (L.M.)
Levin, Harry M., Villisca
Lewis, Samuel J., Columbus Junction
Lewis, William B., Webster City
Lierle, Dean M., Iowa City
Liken, John A., Creston
Limburg, J. Irwin, Jefferson
Limburg, John I., Jr., Jefferson
Lincoln, Simon E., Des Moines
Lindemann, Erich, Boston, Mass.
Link, Martha A. M., Dubuque
Linn, Ellis G., Des Moines
Liska, Edward J., Ute
Little, Luther W., Atkins
Lloyd, John M., Washington
Lockhart, Harold A., Cedar Rapids
Loeck, John F., Aurora
Loes, Anthony M., Dubuque
Lohman, Frederick H., Waterloo
Lohmann, Carl J., Burlington
Lohr, Oscar C., Churdan
Lohr, Phillips E., Churdan
Loizeaux, Charles E., Dubuque
Long, Draper L., Mason City
Longworth, Wallace H., Boone
Loosbrock, John F., Lacona
Loose, David N., Maquoketa (L.M.)
Lorch, Alvin H., Iowa City
Lorfeld, Gerhard W., Davenport
Losh, Clifford W., Des Moines
Lott, Guy A., Osage
Lott, Robert H., Carroll
Lovejoy, E. Parish, Des Moines
Lovelady, Ralph, Sidney
Lovell, Harold W., Katonah, New York
Lovett, Charles E., Lineville
Lovett, Earl D., Vinton
Loving, Luther W., Estherville
Lowder, William, Maquoketa
Ludwick, Arthur L., Jr., Waterloo
Luehrsmann, Bernard C., Dyersville
Luehrsmann, Bernard H., Dyersville
Luginbuhl, Christian B., Des Moines
Luke, Edward, Coin
Lundvick, Arthur W., Gowrie
Luse, Ralph F., Clinton
Luthy, Karl R., Oskaloosa
Lutton, John D., Sioux City
Lynch, Robert J., Des Moines
Lynn, Arthur R., Marshalltown
Lynn, Clarence E., Dubuque
Lyon, Morton, De Witt
Lytle, Carl C., Dubuque
MacDougal, Roderick F., Iowa City
MacEwen, Ewen M., Iowa City
Mackie, Donald G., Charles City
Mackin, M. Charles, Clear Lake (L.M.)
MacLeod, Hugh G., Greene
Macrae, James G., Creston
Madden, William D., Clinton
Madsen, Charles C., Jr., Omaha, Nebraska
Magaret, Ernest C., Glenwood
Magarian, Sennacherib M., Des Moines
Magee, Emery E., Waterloo
Magoun, Charles E., Trion, Georgia
Mahin, Frank M., Ainsworth
Maiden, Sydner D., Council Bluffs
Mailliard, Robert E., Storm Lake
Maire, Eugene J., Vail
Malamud, William, Iowa City
Maloney, Arthur P., Fonda
Maloy, Wayland H., Shenandoah
Mantle, William B., Albion
Mantz, Russell L., Cedar Rapids
Maplethorpe, Charles W., Toledo
Marble, Edwin J., Marshalltown
Marble, Ira A., Sheffield
Marble, Pearl L., Liscomb
Marble, Willard P., Marshalltown
Marek, Joseph E., Mason City
Maresh, George, Iowa City
Margolin, Julius M., Perry
Maris, Cornelius, Sanborn
Maris, Gerrit, Hull
Maris, William, Sioux Center
Mark, Edward M., Manilla
Marker, John L., Davenport
Marling, Paul F., Gladbrook
Marquis, Fred M., Waterloo
Marquis, George S., Des Moines
Marr, James, Silver City
Marrs, Walford D., Tabor
Marsh, William E., Eldora
Marston, Charles L., Mason City
Martin, George H., Eagle Grove
Martin, Hobart E., Clinton
Martin, James W., Holstein
Martin, John F., Latimer
Martin, John W., New York, N. Y.
Martin, Loran M., Fort Dodge
Martin, Roland F., Sioux City
Martin, Sidney D., Carroll
Mason, Harry P., Wilton Junction
Mason, James H., Plainfield
Mason, Stella M., Mason City
Masson, Hervey F., Washington
Mast, Truman M., Washington
Matheson, John H., Des Moines
Mathias, John P., Mediapolis (L.M.)
Matthews, Damon G., Milton
Matthews, Robert J., Clarinda
Matthey, Carl H., Davenport
Matthey, Walter A., Davenport
Mattison, George, Jr., Akron
Mauer, George A., Le Mars
Mauritz, Emory L., Des Moines
Maxwell, Charles T., Sioux City

Maxwell, George B., Davenport
Maxwell, John, What Cheer
May, George A., Des Moines
Maynard, James H., Adair
McAllister, James, Odebolt
McBride, James T., Des Moines
McBride, Robert H., Sioux City
McBurney, George F., Belmond
McCall, John H., Allerton
McCarl, J. Jay, Sac City
McCarthy, Frank D., Sioux City
McCartney, William H., Des Moines
McCauliff, Guy T., Webster City
McClean, Earl D., Des Moines
McClintock, John T., Iowa City (L.M.)
McClure, Ernest C., Bussey (L.M.)
McClure, Gail A., Ames
McClurg, F. Haven, Fairfield
McConkie, Edwin B., Cedar Rapids
McConkie, Willis L., Carroll
McConnaughey, James T., Mt. Pleasant
McCoy, Harold J., Des Moines
McCrary, Warren E., Lake City
McCrae, Eppie S., Eddyville
McCreedy, Murry L., Brighton
McCreery, John W., Whittemore
McCreight, George C., Des Moines
McCuiston, Harry M., Sioux City
McCutchan, Guy R., Council Bluffs
McDannell, John, Nashua
McDonald, Donald J., Des Moines
McDonald, James E., Mason City (L.M.)
McDowall, Gilbert T., Gladbrook
McDowell, William O., Grundy Center
McElderry, Donald, Ottumwa
McEwen, Earle, Mason City (L.M.)*
McFarland, Guy E., Jr., Ames
McFarland, Guy E., Sr., Ames
McFarland, Julian E., Ames
McGilvra, Raymond I., Guthrie Center
McGowan, James P., Harlan
McGrane, Merle J., New Hampton
McGrath, William J., Elkader
McGready, Joseph H., Independence (L.M.)
McGuire, Clarence A., Dubuque
McGuire, Roy A., Fairfield
McHugh, Charles P., Sioux City
McKean, Alexander C., Ladora
McKee, Thomas L., Keokuk
McKirahan, Josiah R., Wayland
McKirdie, Matthew, Iowa City
McKitterick, John C., Burlington
McLaughlin, Charles W., Washington
McMahon, George T., Waukee
McMahon, Thomas, Lawler (L.M.)
McManus, Joseph P., Graettinger
McMeans, Thomas W., Davenport
McMillan, Edwin C., Hudson
McMillen, Arch S., Fort Dodge
McMurray, Edward A., Newton
McNamara, Frank P., Dubuque
McNamee, Jesse H., Des Moines
McNaughton, Luther D., Eagle Grove
McPherrin, Henry I., Des Moines
McQuillen, Charles W., Charles City
McQuiston, J. Stuart, Cedar Rapids
McVay, Melvin J., Lake City
Mead, Frank N., Cedar Falls (L.M.)
Meany, John F., Rockwell
Meentz, Diedrich J., Fort Madison
Meffert, Clyde B., Cedar Rapids
Meggers, Edward C., McGregor
Mehler, Frank R., New London
Melgaard, Bennett A., Sioux City
Mellen, Robert G., Clinton
Melrose, Maurice C., Independence
Mengert, William F., Iowa City
Mercer, Clifford D., West Union
Meredith, Loren K., Des Moines
Mereness, Herbert D., Dolliver
Merkel, Arthur E., Des Moines
Merkel, Byron M., Des Moines
Merrick, John H., Cherokee
Merrill, Charles H., Oskaloosa
Merrill, Nelson, Marshalltown
Merritt, Arthur M., Des Moines
Merryman, Sara B. Kalar, Blairsburg
Mershon, Clinton E., Adel (L.M.)
Meyer, Alfred K., Clinton
Meyer, George R., Marshalltown (L.M.)
Meyer, Milo G., Marshalltown
Meyers, Frank W., Dubuque
Meyers, Henry A., Davenport
Meythaler, Arthur J., Earlville
Michel, Bernard A., Dubuque (L.M.)
Middleton, George M., Davenport
Miller, Brownlow B., Tabor
Miller, Chester I., Iowa City
Miller, Donald F., Williamsburg
Miller, Enos D., Wellman
Miller, Johannes J., Ackley
Miller, Lawrence A., North English
Miller, Oscar H., Estherville
Miller, Temple M., Muscatine
Miller, Wilbur R., Iowa City
Miller, William B., Centerville
Millice, Glenn S., Battle Creek
Mills, Ernest M., Legrand
Mills, Frank W., Ottumwa
Miltner, Leo J., Davenport
Minassian, Harootune A., Des Moines
Minassian, Thaddeus A., Des Moines
Miner, James B., Jr., Charles City
Miner, James B., Sr., Charles City
Minkel, Roger M., Swea City
Mitchell, Claire H., Indianola
Moen, Harry P., West Union
Moen, Stanley T., Hartley
Moerke, Albert C., Burlington (L.M.)
Moerke, Robert F., Burlington
Moershel, Henry G., Homestead
Moes, Matthew J., Dubuque
Mol, Henry L., Grundy Center
Montgomery, Earl C., Atlantic
Montgomery, Guy E., Keota
Moon, Barclay J., Cedar Rapids
Mooney, Felix P., Jewell
Moore, Daniel V., Sioux City
Moore, Edwin A., Harlan
Moore, Fred, Des Moines
Moore, Gage C., Ottumwa
Moore, Harold H., Ottumwa
Moore, Harris C., Martelle
Moore, Jesse C., Eldon
Moore, Morris, Walnut
Moore, Pauline V., Iowa City
Moorehead, Giles C., Ida Grove (L.M.)
Moorehead, Harold B., Underwood
Moran, Thomas A., Melrose
Morden, Richard P., Des Moines
Morden, Roy R., Des Moines
Morgan, Earl E., Sioux City
Morgan, Fred B., Clinton
Morgan, Harold W., Mason City
Morganthaler, Otis P., Templeton
Morris, Zenella N., Stockport
Morrison, Edward D., Fort Dodge
Morrison, John R., Carroll
Morrison, John W., Alta
Morrison, Orry C., Carroll
Morrison, Roland B., Carroll
Morrison, Wesley J., Cedar Rapids
Morse, Charles H., Eagle Grove (L.M.)
Morton, Matthew T., Estherville
Moskovitz, Julius M., Council Bluffs
Mott, William H., Farmington
Moulton, Milo W., Bellevue
Mountain, Elmer B., Des Moines
Mueller, Emil F., Dyersville
Mueller, James A., Fenton
Mueller, John J., Dubuque
Muench, Virgil O., Nichols
Muhs, Emil O., Muscatine
Mullmann, Arnold J., Adel
Mulsow, Frederick W., Cedar Rapids
Mumma, Claude S., Los Angeles, Calif.
Munden, Ralph E., Cedar Rapids
Munger, Elbert E., Jr., Spencer
Munger, Elbert E., Sr., Spencer
Murchison, Kenneth, Sidney
Murphey, Arlo L., Fredericksburg
Murphy, Cornelius B., Alton
Murphy, George C., Waterloo
Murphy, Joseph J., Cedar Rapids
Murray, Frederick G., Cedar Rapids
Murtaugh, James E., Charles City
Myers, Edward M., Boone
Myers, Kermit W., Sheldon
Nash, Edwin A., Dike
Neal, Emma J., Cedar Rapids
Nederhiser, Morgan I., Cascade
Needles, Roscoe M., Anita
Negus, Cora W., Keswick
Nelson, Arnold L., Des Moines
Nelson, Harold C., Red Oak
Nelson, Caryl L., Waterloo
Nelson, Fred L., Ottumwa
Nelson, Frederick L., Jr., Ottumwa
Nelson, Harry E., Dayton
Nelson, Ira D., Toledo
Nelson, Leo C., Jefferson
Nelson, Paul O., Emmetsburg
Nelson, Robert J., Clinton
Nemec, Joseph J., Cedar Rapids
Nesler, Alfred B., Dubuque
Netolicky, Joseph Y., Solon
Netolicky, Robert Y., Cedar Rapids
Netolicky, Wesley J., Cedar Rapids
Neu, Harold N., Sac City
Neufeld, Frank, Davenport
Neuzil, William J., Cedar Rapids
Newell, William C., Ottumwa
Newland, Don H., Belle Plaine
Newland, Elmer R., Drakesville
Newland, Mark A., Center Point
Newlove, Frank E., Battle Creek
Newton, Dennis L., Fort Madison
Niblock, George F., Derby
Nicholson, Clyde G., Spirit Lake
Nicoll, Charles A., Panora
Nicoll, David T., Mitchellville
Nielsen, Rudolph F., Cedar Falls
Nielsen, Arthur L., Harlan
Niemann, Theodore V., Brooklyn
Nierling, Paul A., Cresco
Noble, Earl H., Clemons
Noble, Frederick W., Fort Madison
Noble, Harold F., Fort Madison
Noble, Lloyd E., Rhodes
Noble, Nelle S., Des Moines
Noble, Rusl P., Cherokee
Noe, Carl A., Cedar Rapids
Noe, Charles F., Amana (L.M.)
Nomland, Ruben, Iowa City
Noonan, James J., Marshalltown
Nord, Donald H., Cambridge
Norem, Walter, Muscatine
North, Frank R., Winfield
Norton, Alva C., Rockwell City (L.M.)
Noun, Louis J., Des Moines
Noun, Maurice H., Des Moines
Nourse, Leslie M., Des Moines
Nowak, Edward C., Philadelphia, Pa.
Null, Frederick F., Hawarden
Nyquist, David M., Eldora
Nysewander, Christian, Des Moines (L.M.)
Ober, Frank G., Burlington
Obermann, Charles F., Cherokee
O'Brien, Cecil S., Iowa City
O'Brien, Stephen A., Mason City
O'Connor, Edwin C., Alta Vista
Odell, Isaac H., Des Moines
O'Donoghue, Arch F., Sioux City
O'Donoghue, James H., Storm Lake
Oelrich, Carl D., Sioux Center
Oggel, Herman D., Maurice
O'Keefe, John E., Waterloo (L.M.)
O'Keefe, Matthew E., Council Bluffs
O'Keefe, Paul T., Waterloo
Oldag, George C., Paullina
O'Leary, Francis B., George
Olsen, Martin I., Des Moines
Olson, Evelyn M., Winterset
Olson, Russell L., Northwood
Olson, William E., Des Moines
O'Neal, Harold E., Tipton
Osborn, Clarence R., Dexter
Osincup, Paul W., Sioux City
Osnes, Elias N., Readlyn
O'Toole, Laurence C., Le Mars
O'Toole, Roger L., Marshalltown
O'Toole, Thomas J., Eagle Grove
Ott, Martin D., Davenport
Otto, Paul, Fort Dodge
Overton, Lewis M., Des Moines
Owen, William E., Cedar Rapids
Owen, William R., Osage

Pace, Arthur A., Toledo (L.M.)
Padgham, James B., Ocheyedan
Padgham, John T., Grinnell
Page, Addison C., Des Moines (L.M.)
Pagelson, Otto H., Iowa Falls
Pahlas, Henry M., Dubuque
Paige, Ralph T., La Porte City
Painter, Jesse C., Dubuque
Palmer, Carson W., Guttenberg
Paragas, Modesto R., Creston
Parish, John R., Grinnell
Parish, Ora F., Grinnell (L.M.)
Park, Elmer R., Sioux City
Parker, Bernard B., Centerville
Parker, Edward S., Ida Grove (L.M.)
Parker, George F., Iowa City
Parker, James D., Fayette
Parker, Robert L., Des Moines
Parker, William W., Floris
Parry, Roy E., Scranton
Parsons, Harry C., Grinnell
Parsons, Irving U., Malvern (L.M.)
Parsons, John C., Des Moines
Parsons, Percival L., Traer
Paschal, George A., Williams
Pascoe, Paul L., Carroll
Patterson, Alpheus W., Fonda
Patterson, John N., Burlington (L.M.)
Patterson, Roy A., Webster City
Paul, John D., Anamosa
Paul, William D., Iowa City
Paulsen, Herbert B., Harris
Paulus, Edward W., Iowa City
Payne, Rosewell H., Exira
Pearson, George J., Burlington
Pearson, William W., Des Moines
Peart, John C., Dixon
Pease, Herbert, Blairsburg
Peasley, Harold R., Des Moines
Peck, John H., Oakdale
Peck, Raymond E., Davenport
Peek, Levin H., Lake City
Peisen, Conan J., Des Moines
Pence, James W., Columbus Junction
Peppers, Austin W., Sigourney
Perkins, Franklyn C., Hedrick
Perkins, Rolla W., Sioux City
Perley, Arthur E., Waterloo
Pershing, Frank O., Keota
Peschau, Waldo E., Cedar Rapids
Peters, Fletcher E., Defiance
Petersen, Emil C., Atlantic
Petersen, Millard T., Atlantic
Peterson, August J., Forest City
Peterson, Frank R., Iowa City
Peterson, Ray W., Clear Lake
Peterson, Vernon W., Iowa City
Petrovitsky, John C., Cedar Rapids
Petty, Wallace S., Sioux City
Pfaff, Richard O., Des Moines
Pfannebecker, William, Sigourney
Pfeiffer, Eric P., Sigourney
Pfeiffer, Ernst, Hartley
Pfeiffer, Harry E., Cedar Rapids
Pfohl, Anthony C., Dubuque
Phillips, Albin B., Clear Lake (L.M.)
Phillips, Allan B., Des Moines
Phillips, Clarence P., Muscatine
Phillips, Isaac H., Missouri Valley
Phillips, Jesse H., Montezuma (L.M.)
Phillips, Norman W., Clear Lake (L.M.)
Phillips, Walter B., Davenport
Pickard, John C., Dubuque
Piekenbrock, Frank J., Dubuque
Piercy, Kenneth C., Maxwell
Pierson, Lawrence E., Sioux City
Plankers, Arthur G., Dubuque
Plant, Oscar H., Iowa City
Plass, Everett D., Iowa City
Plimpton, Robert P., Denison
Plummer, George A., Cresco
Pollock, Roscoe, Douds-Leando
Pope, John M., Cherokee
Porath, William C., Storm Lake
Porstmann, Louis J., Davenport
Porter, Charles E., Redfield
Porter, Clarence M., Woodward
Porter, Robert J., Des Moines
Porter, Samuel D., Grinnell
Posner, Edward R., Des Moines (L.M.)
Powell, Burke, Albia (L.M.)
Powell, Lester D., Des Moines
Powell, Robert A., Farragut
Powell, Velura E., Red Oak
Powers, Francis E., Boone
Powers, Fred W., Waterloo (L.M.)*
Powers, Henry R., Emmetsburg
Powers, Ivan R., Waterloo
Powers, Joseph C., Hampton
Preece, Wade O., Waterloo
Prentice, George L., Troy
Prentiss, Robert J., Iowa City
Presnell, J. William, Scranton
Presnell, William H., Charlotte
Prettyman, Oscar R., Manson
Prewitt, Leland H., Ottumwa
Price, Alfred S., Des Moines
Priessman, Frank A., Keokuk
Priestley, Joseph B., Des Moines
Pringle, Jesse A., Bagley (L.M.)
Proctor, Rothwell D., Cedar Rapids
Prouty, James V., Cedar Rapids
Purcell, Bert E., Iowa Falls
Purdy, William O., Des Moines
Putnam, Chester L., Manchester
Quinn, Francis P., Dubuque
Ralston, Furman P., Knoxville
Rambo, Cyrus C., Creston
Rambo, David T., Ottumwa
Rambo, Eli F., Webster City
Randall, John H., Iowa City
Randall, William L., Hampton
Rankin, Isom A., Iowa City
Rankin, John R., Keokuk
Rankin, William, Keokuk
Ransom, Harry E., Des Moines
Rarick, Ivan H., Eagle Grove
Rasmussen, Carl C., Sully
Rater, David L., Ottumwa
Rathe, Herbert W., Waverly
Ravitts, Joseph L., Montezuma
Raw, Elmer J., Pierson
Rawson, Elwyn G., Anamosa
Redmond, Thomas M., Monticello
Reed, Andrew I., Estherville
Reed, Charles S., Agency
Reed, Guy P., Davis City (L.M.)
Reed, Lloyd T., Gravity
Reed, Milo G., Melbourne
Reed, Paul A., Iowa City
Reed, Roe B., Clearfield
Reeder, James E., Sioux City
Reiley, William S., Red Oak
Reimers, Robert S., Fort Madison
Reinicke, Edward L., Dubuque (L.M.)
Reinsch, Frank, Ashton
Rendleman, William H., Davenport
Reuber, Roy N., Mason City
Reuling, Frank H., Waterloo
Reutter, Garfield A., Blanchard
Reynolds, Albert C., Mingo
Reynolds, Earl O., Greenfield
Rhomberg, Edward B., Guttenberg
Rice, Floyd W., Des Moines
Richards, Frank O., Winterset
Richardson, Leon F., Collins
Richmond, Arthur C., Fort Madison
Richmond, Frank R., Fort Madison
Richmond, Paul C., New Hampton
Richter, Harold J., Albia
Ridenour, Joseph E., Waterloo
Rieniets, John H., Cedar Rapids
Riggert, Leonard O., Clinton
Riggle, Frank P., Lamont
Riley, John, Exira (L.M.)
Rimel, George W., Bedford
Ringena, Engelke J., Brooklyn
Rinker, George E., Oto
Risk, Howard, Oelwein
Ristine, James O., Maquoketa
Ristine, Leonard P., Mt. Pleasant
Ritchey, Sterling J., Newton
Ritter, John F., Maquoketa
Robb, James B., Chariton
Robbins, Guy F., Clinton
Roberts, Francis L., Spirit Lake
Roberts, Francis M., Knoxville
Robertson, Andrew A., Council Bluffs
Robertson, Treadwell A., West Liberty
Robinson, Robert E., Waverly
Robinson, Van C., Des Moines
Rock, John E., Davenport
Rodawig, Donald F., Spirit Lake
Rodemeyer, Frederick H., Sheffield
Roder, Carl F., Dumont
Roe, Cullen B., Afton
Rogers, Claude B., Earlville
Rogers, Marion W., Leon
Rohlf, Edward L., Waterloo (L.M.)
Rohlf, Edward L., Jr., Waterloo
Rohlf, William A., Waverly (L.M.)
Rohner, Frank J., Iowa City
Rohrbacher, William M., Iowa City
Rohwer, Roland T., Sioux City
Rolfs, Floyd O., Parkersburg
Rolfs, Fred A., Aplington
Rominger, Clark R., Cresco
Rominger, Clark W., Waukon
Roost, Frederick H., Sioux City
Rose, Alvin A., Story City
Rose, Joseph E., Grundy Center
Rosebrook, Lee E., Ames
Rosendorff, Charlotte, LeClaire
Rosenthal, Nana L., Des Moines
Ross, Arthur J., Perry (L.M.)*
Rotkow, Maurice J., Des Moines
Rowan, Charles J., South Laguna, Calif.
Rowat, Harry L., Des Moines
Rowe, Frank N., Denison
Rowley, William G., Sioux City
Rowse, Robert Q., Sioux City
Royal, Lester A., West Liberty
Royal, Malcolm A., Des Moines
Ruml, Wentzle, Cedar Rapids
Runyon, John H., Seymour
Rusk, Lester D., Sioux City
Russ, Jesse E., Rake
Russell, Charles R., Keosauqua
Russell, Edmund D., Fort Dodge
Russell, Elwood P., Iowa City
Russell, John, Des Moines
Russell, Ralph E., Waterloo
Rust, Emery A., Webb
Ruth, Verl A., Des Moines
Ryan, George C., Maquoketa
Ryan, Granville N., Des Moines (L.M.)
Ryan, John C., Des Moines
Ryan, Martin J., Sioux City
Saar, Jesse L., Donnellson
Safley, Agnes I., Cedar Rapids
Sage, Erwin C., Burlington
Sahs, Adolph L., New Haven, Conn.
St. Onge, Joseph A., Sioux City
Salisbury, Frederick S., Knoxville
Sampson, Carl E., Creston
Sampson, Frank E., Creston (L.M.)
Sams, Joseph H., Clarion (L.M.)
Samuelson, Carl A., Sheldon
Sanders, George E., Des Moines
Sanders, Matthew G., Fort Dodge
Sanders, William E., Des Moines
Sarff, Floyd G., Logan
Sawyer, Grace M., Woodward
Sawyer, Prince E., Sioux City
Sayler, Harley L., Des Moines (L.M.)
Sayre, Ivan K., St. Charles
Scales, Emmet T., Des Moines
Scanlan, George C., De Witt
Scanlan, Maurice, De Witt
Scanlon, George H., Iowa City
Scannell, Raymond C., Carroll
Schaefer, Paul H., Burlington
Schaeferle, Lawrence G., Gladbrook
Schanche, Arthur N., Ames
Scharle, Theodore, Dubuque
Scheele, Matthias H., Dubuque
Schenk, Erwin, Des Moines
Schermerhorn, Grace C., Clinton
Schilling, Nicholas, New Hampton
Schmidt, Bernhard H., Davenport (L.M.)
Schmitt, Robert W., Scranton
Schmitz, Henry C., Des Moines
Schnug, George E., Dows
Schoon, Harold W., Sibley
Schroeder, Adrian J., Marshalltown
Schroeder, Leslie V., Walcott
Schroeder, Mellgren C., Monroe

Schrup, Joseph H., Dubuque (L.M.)
Schultz, Albert A., Fort Dodge
Schultz, Ivan T., Humboldt
Schultz, Nelle E. T., Humboldt
Schwartz, John W., Sioux City
Scott, Homer W., Fort Dodge
Scott, Philip A., Spirit Lake
Scott, Sophie H., Des Moines (L.M.)
Scott, Walter E., Adel (L.M.)
Scruby, Leone M., Des Moines
Seabloom, John L., Red Oak
Seaman, Charles L., Mt. Ayr
Sebern, Richard C., Fort Dodge
Secoy, Frank L., Sioux City
Sedlacek, Leo B., Cedar Rapids
Seibert, Cecil W., Waterloo
Seidler, William A., Jamaica (L.M.)
Seiler, Raymond A., Blairstown
Sellards, Joseph W., Clarinda
Sells, Benjamin B., Independence
Sells, Frank W., Osceola
Selman, Ralph J., Ottumwa
Senska, Frank R., Brandon
Senty, Elmer G., Davenport
Severson, George J., Slater
Shafer, Lee E., Davenport
Shane, Robert S., Pilot Mound
Shannon, Edwin R., Waterloo
Sharon, James P., Des Moines
Shaw, Albert E., Des Moines
Shaw, David F., Britt
Shaw, Ernest E., Indianola
Shaw, Mathew M., Madrid
Shaw, Robert E., Clarksville
Shellito, Amos G., Independence (L.M.)
Shelton, Charles D., Bloomfield
Sherman, Ellen A., McGregor (L.M.)
Sherman, Elmer E., Keosauqua
Sherman, Richard C., Farley
Shirley, Hale F., Iowa City
Shively, Jay D., Osceola
Shoemaker, Rosemary, Des Moines
Shonka, Thomas E., Malvern
Shope, Charles D., Terril
Shorey, Joseph R., Davenport
Shrader, John C., Fort Dodge
Shulkin, Samuel H., Sioux City
Sbumate, C. Frank, Miles
Sibley, Edward H., Sioux City
Sibley, Samuel E., Sioux City
Sievers, Claudius L., Denison
Sigworth, Fred B., Anamosa
Simeral, Fred E., Brooklyn
Simmons, Ralph R., Des Moines
Sinn, Irvin J., Williamsburg
Sinning, Augustus, Iowa City
Sinning, John E., Melbourne
Skallerup, Walter M., Walker
Skelley, William F., Davenport
Skinner, Frank S., Marion*
Slater, Ernest W., Jewell
Slavin, Charles T., Moravia
Small, William B., Waterloo (L.M.)
Smead, Leslie L., Newton
Smiley, Ralph E., Mason City
Smith, Arthur F., Manning
Smith, Cecil R., Onslow
Smith, Channing G., Granger
Smith, Elmer M., State Center
Smith, Eugene E., Waterloo
Smith, Edgar F., Storm Lake
Smith, Ferdinand J. S., Milford (L.M.)
Smith, Frank S., Nevada (L.M.)
Smith, Franklin C., Mt. Ayr
Smith, Fred M., Iowa City
Smith, Harold F., Iowa City
Smith, Harry P., Iowa City
Smith, Harvey S., Jr., Iowa City
Smith, Herman J., Des Moines
Smith, Homer A., Correctionville
Smith, Howard W., Woodward
Smith, Jason N., Iowa City
Smith, Lawrence D., Des Moines
Smith, Rex I., Waterloo
Smith, Robert A., Albia
Smith, Robert T., Granger
Smith, Roscoe D., Clarinda
Smith, Sidney D., Waterloo
Smith, Thomas T., Shelby
Smittle, Jacob N., Waucoma
Smouse, David W., Los Angeles, California (L.M.)*
Smouse, William O., Des Moines
Smrha, James A., Cedar Rapids
Smythe, Arnold M., Des Moines
Snitkay, Carl J., Belle Plaine
Snodgrass, Ralph W., Des Moines
Snyder, Dean C., DeWitt
Snyder, Glen E., Grimes
Snyder, John A., Roland
Snyder, Raleigh R., Des Moines
Soe, Peder, Kimballton
Sohm, Herbert A., Des Moines
Sokol, John M., Spencer
Sollenbarger, George H., Corydon
Sollis, Delmar B., Chariton
Somers, Pearl E., Grinnell (L.M.)
Sones, Clement A., Des Moines
Sorensen, Elmer M., Red Oak
Sorensen, Regnar M., Des Moines
Sorenson, Aral C., Davenport
Sorenson, Kermit R., Sabula
Soucek, Adolph, Cherokee
Southwick, William W., Marshalltown
Spain, Robert T., Conrad
Sparks, Francis R., Waverly (L.M.)
Spaulding, Homer L., Ankeny
Spear, William M., Oakdale
Speidel, Glenn P., Dearborn, Michigan
Spellman, Martin T., Cedar Rapids
Sperow, Wendell B., Nevada
Sperow, William E., Carlisle
Spielhagen, Guenther F., Iowa City
Spilman, Harold A., Ottumwa
Spilman, Smith A., Ottumwa (L.M.)
Spinharney, Lester J., Cherokee
Springer, Floyd A., Des Moines
Sproul, William M., Des Moines
Stabo, Trond N., Decorah (L.M.)
Stafford, James F., Lovilia
Stageman, John F., Council Bluffs
Stahr, Roland W., Fort Dodge
Stalford, John H., Sac City (L.M.)
Stam, Nicholas C., Mason City
Standefer, Joe M., Tama
Stansbury, John E., Cedar Rapids
Stark, Callistus H., Cedar Rapids
Starr, Charles F., Mason City
Starry, Allen C., Sioux City
Stauch, Martin O., Whiting
Staudt, Alfred J., Waterloo
Stech, Joseph L., Council Bluffs
Steele, George H., Belmond
Steelsmith, Frank R., Des Moines
Steffey, Fred L., Keokuk
Stegman, Jacob J., Marshalltown
Steindler, Arthur, Iowa City
Steinle, George H., Burlington
Stephen, Paul, Des Moines
Stephen, Raymond J., Cedar Rapids
Stepp, James K., Manchester
Sterling, Allen F., Norway
Sternagel, Fred, West Des Moines
Sternberg, Walter A., Mt. Pleasant (L.M.)
Sternhill, Irving, Mason City
Sternhill, Isaac, Council Bluffs
Stevens, Franklin A., Belmond (L.M.)
Stevens, Harry L., Ottumwa
Stevenson, Eber F., Waterloo (L.M.)
Stevenson, William W., Rockwell City
Stewart, Alexander P., Inwood
Stewart, Robert A., Independence
Stewart, William L., Mediapolis
Stinson, Alice C., Estherville
Stoakes, Charles S., Lime Springs
Stober, Raymond W., Charles City
Stodden, Frank J., Sioux City
Stoecks, William A., Davenport
Stolley, Jordan G., Moville
Stone, James G., Bloomfield
Stone, Roy D., Sully
Strawn, John T., Des Moines
Stribley, Harry A., Dubuque
Strohbehn, Edward F., Davenport
Strosnider, Homer O., Keokuk
Stroy, Herbert E., Osceola
Struble, Gilbert C., Ottumwa
Struck, Kuno H., Davenport
Stuart, Percy E., Nashua
Stuckart, Theodore, Dubuque
Studebaker, John F., Fort Dodge
Studebaker, Leland F., Fort Dodge
Stumme, Ernest H., Denver
Stutsman, Eli E., Washington
Suchomel, Thomas F., Cedar Rapids
Sugg, Herbert R., Clinton
Sullivan, Lawrence F., Donahue
Sult, William F., Gilman
Sunderbruch, John H., Davenport
Swab, Charles C., Cedar Rapids
Swallum, James A., Storm Lake
Swallum, Troy W., Spencer
Swanson, John W., Sioux City
Swearingen, Guy H., Sac City
Swift, Frederick J., Marshalltown
Swinney, Roy G., Richland
Sybenga, Jacob J., Pella
Synhorst, John B., Des Moines
Sywassink, George A., Muscatine
Tait, John H., Des Moines
Talbott, Eugene F., Grinnell (L.M.)
Talley, Louis F., Marshalltown
Tamisiea, Francis X., Missouri Valley
Tamisiea, John L., Missouri Valley
Tandy, Roy W., Morning Sun
Tapper, George W., Monona
Taylor, Charles I., Pomeroy
Taylor, Edward D., Davenport (L.M.)
Taylor, John L., Montezuma
Taylor, Lawrence A., Ottumwa
Taylor, Maude, Ottumwa
Taylor, Robert S., Davenport
Terrall, John J., Cedar Rapids
Teufel, John C., Davenport
Thatcher, Wilbur C., Fort Dodge
Thein, Garfield M., Oelwein
Theisen, Roy I., Dubuque
Thielen, Edward W., Waterloo
Thielen, Michael H., Grundy Center
Thierman, Edward J., Cedar Falls
Thomas, Clarence I., Guthrie Center
Thomas, Clifford W., Forest City
Thomas, Clyde E., Keystone
Thomas, Colin G., Monticello
Thomas, Louis A., Red Oak
Thomas, William H., McGregor
Thompson, Gilbert N., Jesup
Thompson, Harry F., Forest City (L.M.)
Thompson, Howard E., Dubuque
Thompson, Ira F., Donnellson
Thompson, James R., Waterloo
Thompson, Kenneth L., Oakland
Thompson, William H., Winterset (L.M.)
Thompson, William L., Bayard (L.M.)
Thoms, Adolph N., Cedar Falls
Thomsen, Thomas F., Red Oak
Thomson, John A., Sioux City
Thorburn, Orval L., Ames
Thornburg, William V., Guthrie Center
Thornell, Joseph B., Council Bluffs
Thornton, James W., Livermore, Calif.
Thornton, John W., Lansing
Thornton, Thomas F., Waterloo
Thorson, John A., Dubuque
Throckmorton, James F., Des Moines
Throckmorton, Jeannette Dean, Des Moines
Throckmorton, Robert F., Des Moines (L.M.)
Throckmorton, Scott L., Chariton
Throckmorton, Tom B., Des Moines
Throckmorton, Tom M., Chariton (L.M.)
Tice, Claude B., Mason City
Tidball, Charles W., Independence
Tinley, Mary L., Council Bluffs
Tinley, Mathew A., Council Bluffs
Tinley, Robert E., Council Bluffs
Tinsman, Eugene, Orient
Titus, Elton L., Iowa City
Tolliver, Hillard A., Charles City
Tombaugh, Frank M., Burlington (L.M.)
Tompkins, Erle D., Clarion
Toubes, Abraham A., Des Moines
Tracy, John S., Sioux City
Traister, John E., Eddyville
Trey, Bernhard L., Marshalltown

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RADIATION CONTROL OF HYPERPARATHYROIDISM*

EDWIN A. MERRITT, M.D.†
Washington, D. C.

The amazing and obscure mechanism which controls calcium metabolism is centered in the parathyroid glands. The parathyroid glands were known until very recent times, only as being responsible for the production of tetany, if removed. Osteitis fibrosa cystica was first described by von Recklinghausen in 1891, but not associated with dysfunction of the parathyroid glands by him or any of several other investigators who followed. In 1925 Hoffheinz collected cases of parathyroid tumors reported in the literature since 1900 and found twenty-five which were associated with cystic lesions of the bones. Berman and Collip, working independently, found the active principle of the parathyroid glands capable of raising the serum calcium. Greenwald and Aub found that hypercalcemia produced by parathormone was followed by increased calcium in the urine. Mandl, an Austrian surgeon, achieved distinction by performing the first parathyroidectomy for the cure of an osteomalacic disease. Following him, many others have contributed to this subject and we may now accept without question that the function of the parathyroid glands is to maintain a proper calcium balance. Their complete removal results in tetany, just as a total thyroidectomy results in myxedema.

In tetany the bones are not affected, while in hyperparathyroidism there is a local or general demineralization and the bones are consequently fragile and easily broken. The blood calcium is usually low in tetany, and high in hyperparathyroidism, while the serum inorganic phosphorous is decreased in hyperparathyroidism and increased in tetany, although there are a great many cases reported in which no substantial variation in either serum calcium or phosphorous has occurred.

Animal experiments reported by Jaffe and Bodansky in 1930 show that the production of osteitis fibrosa cystica by the administration of parathormones is possible in dogs, although difficult, and that loss of appetite was a constant observation when the stage of hypercalcemia was reached. These and many other experiments, together with a large number of clinical studies, have established hyperparathyroidism as a cause of osteitis fibrosa cystica, a comparatively rare disease, which presents few diagnostic difficulties when the disease is established. However, there are other manifestations of hyperparathyroidism which are not rare pathologic curiosities and are frequently encountered and usually overlooked.

SYMPTOMS

The common manifestations of hyperparathyroidism occur more frequently in women who have passed the menopause, whose chief complaint is pain usually located at the site where there is the most extensive demineralization of the bones. This pain is always intense if the demineralizing process affects a weight-bearing joint. The disease is insidious and the onset covers a period of years, advancing more rapidly in some instances than others and for no apparent reason. Long continued, deep-seated pain in a bone or joint, increasing to a point of producing disability, especially in the spine of a woman over fifty years of age, would justify more than a suspicion as to the existence of hyperparathyroidism. Pain is always exaggerated by motion, and when the spine is involved the recumbent position frequently aggravates the pain, so that in some cases the sufferer actually sleeps in a sitting posture rather than attempting to endure the agony of lying down. With the progress of the disease, spon-

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†From the radiological clinic of Drs. Groover, Christie and Merritt.

taneous fractures and cysts may occur, and not infrequently a pathologic fracture or a noticeable swelling over the site of a bone cyst is the first intimation of this disorder. Urinary symptoms, such as renal colic, hematuria and frequency are occasionally encountered, but while renal or urinary calculi may be present and produce symptoms in any case of hyperparathyroidism, it may be stated that in general, whereas numerous urinary calculi are present due to hyperparathyroidism, the bone changes are not apparent.

Shelling's clinical classification of hyperparathyroidism is simple and adequate. He mentions first the clinical form with typical bone lesions in which osteitis fibrosa cystica predominates; second, the more common form characterized by local or general demineralization of bone, producing osteoporosis, but without cyst formation; and third, calcium deposits in the lungs, joints and especially the kidneys, constituting renal calculi. It is difficult, and probably with our present knowledge impossible, to explain the reason for the existence of these variations in different subjects. Kyphosis and scoliosis of the spine invariably follow in all cases where the demineralization process affects the vertebrae. We have recorded instances of patients who consulted a physician because of pain in the back and subsequent decrease in height.



Fig. 1. White male, fifty years of age. Disabled November, 1938, after lifting heavy weight. Confined to bed. Roentgen examination showed vertebral osteoporosis with herniation of nucleus pulposis into bodies. Complete relief after irradiation of parathyroid region.

Usually in the more extensive form of the disease there is loss of appetite which, you will recall, was observed by Collip in his experiments on dogs when the stage of hypercalcemia was reached. Weight decrease and asthenia are pronounced. Patients complain of being "tired," "fatigued to the point of complete exhaustion," "inability or great difficulty in climbing stairs" and "dyspnea on any exertion." In general, all patients complain of anorexia and an indefinite indigestion, and generally of constipation. When there is pronounced spinal kyphosis there are invariable and constant cardiac and gastric symptoms, such as palpitation, tachycardia and a sense of undue fullness in the epigastrium after food taken even in small amounts. In such cases, the symptoms are explained by the compression of the heart and stomach due to the deformed bony thorax, and the shortened spine.



Fig. 2. White female, fifty-seven years of age. Disabling pain in lumbar region, October, 1935. Unable to lie down for three weeks. Roentgen examination showed pronounced alteration in contour of vertebral bodies with hour-glass deformity and partial collapse. Complete relief after second series of radiation over parathyroid glands.

The blood picture is that of a secondary anemia which is extreme in the advanced cases and less pronounced in the milder forms of the disease. In many instances hyperparathyroidism has been confused with metastatic carcinoma, and multiple myeloma. When we reflect that malignant dis-

ease affecting the osseous system produces pain, asthenia, loss of weight, loss of muscle power, elevation of temperature, secondary anemia and bone destruction, it is easy to explain the difficulties in diagnosis, and it is not improbable that a common denominator exists, in some instances, for hyperparathyroidism and myeloma. As a matter of fact there are four conditions which are at times quite indistinguishable from each other if the lesions of the spine are considered by themselves; basophilic adenomas of the pituitary gland, multiple myeloma, metastatic carcinoma and hyperparathyroidism.

The evidence which establishes hyperparathyroidism as a cause of osteitis fibrosa cystica is, as I have said, conclusive, but it is interesting to speculate upon the possible relationship between dysfunction of the parathyroid glands and other osteopathies. The influence of the ovarian function in the rapid development of carcinoma of the

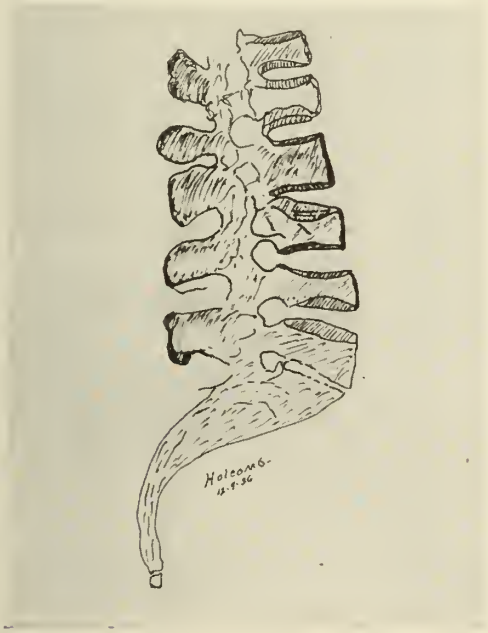


Fig. 3. White female, seventy-six years of age. Disability since August, 1936. Unable to bend spine without violent pain referred to thighs. Progressive disability since, which was practically complete by March, 1939. Blood calcium low—6.3 milligrams. Improved very much two weeks after irradiation of parathyroid region.

breast is well known, and the observation that tumors of thyroid origin both primary and metastatic are influenced by menstruation is fundamentally sound. Osteitis deformans (Paget's disease) may be associated or possibly aggravated by parathyroidism. The literature furnishes examples of improvement of the bony lesions following parathyroidectomy, and we have repeatedly observed a complete relief from pain. However, our experience is limited to a few cases and the results of a parathyroid irradiation in this disease have not been consistent. It is also quite likely that some of the arthritides commonly regarded as being of metabolic origin are also influenced, if not initiated, by parathyroid dysfunction, but on this subject our experience justifies nothing more than speculation.

PATHOLOGY

McMurray, quoted by Hall, states that hyperparathyroidism is characterized by the replacement of bone by fibrous tissue and it occurs in two distinct types which vary from each other in many essential features. The first is the localized type where, in the skeletal structure, it occurs as a localized bone disease in one bone and is not associated with alteration in calcium or phosphorous metabolism and may not be, and usually is not, associated with a parathyroid tumor. The second type is the comparatively rare generalized type known as von Recklinghausen's disease. The pathologic picture must indeed be a varying one, for we are dealing with a disease which may manifest itself either as a single cyst of a bone, a slight demineralization of one or more bones, or many cysts widely distributed but tending to involve long bones or a demineralization process which leaves but a shadow of a bony structure and that grotesquely altered.

DIAGNOSIS

A complete roentgen examination of the entire skeleton is indicated in any suspected case, but contrary to the accepted and published statements the disease does not produce characteristic bony lesions. The most dependable roentgen signs are to be found in the skull and spine, and, in the case of generalized osteitis fibrosa cystica, in the long bones. The skull may show a miliary granular type of osteoporosis as pointed out by Camp, but it is not absolutely characteristic. The spine may show extensive osteoporosis of the vertebral bodies with alterations in contour due to herniation of the nucleus pulposis into the vertebrae, but this is by no means characteristic since it may be found also in multiple myeloma and in certain pituitary tumors. An hour-glass, or fish-tail deformity of the vertebral bodies is, however, a constant finding in hyperparathyroidism affecting the spine and may not be associated with other bone lesions. As a rule, when the spine is involved other bones escape. Ravault and his associates have directed attention to painful vertebral osteoporosis but they have not recognized hyper-

parathyroidism as a factor. Multiple cysts, widely distributed throughout the skeleton and especially in the long bones, are characteristic of the chronic osteitis fibrosa cystica of long standing, but the picture is certainly not diagnostic, for multiple myeloma may and does produce identical lesions. The circular, sharply defined, punched-out lesions of the skull are not seen in hyperparathyroidism, and are frequently seen in multiple myeloma. So, perhaps, it would be better to avoid the term "characteristic" in describing the lesions which are supposedly of parathyroid origin.

TREATMENT

Following the trail blazed by Mandl, many surgeons have performed parathyroidectomies, removing some or all of the parathyroid glands, parathyroid adenomas and cysts, and often with success as far as the cure of the disease is concerned; but the operation is difficult and, according to all the authorities available, should be performed only by a "good thyroid surgeon".

The parathyroid bodies, developing as they do from the third and fourth branchial pouches may be situated anywhere from the cricoid cartilage downward along the trachea and carotid arteries well into the thoracic cavity. The superior group developing from the third branchial pouch is fairly constant in position, although they may be within the substance of the thyroid gland and thus escape detection. The inferior group varies considerably in number and position. In addition, numerous minute islands of functionally active parathyroid tissue may be scattered throughout the connective tissue and fat of the anterior and mid-cervical region around the parathyroid glands proper and quite distant from them. The pathologist, J. W. Lindsay, made a special study at my request of four cadavers for the purpose of locating and identifying the parathyroid glands. He found the task exceedingly difficult. McCallum has charted the location of the parathyroids in sixty-seven dissections of the human subject and emphasizes the uncertainty as to their number and location in any given case.

Hyperparathyroidism is not necessarily associated with any apparent enlargement of the gland or glands or with an adenoma. This is well illustrated by a case reported by Hitzrot and Comroe. At the first operation a normal gland was removed without clinical improvement of a disabling cystic bone disease. Two normal glands were removed at a second operation from opposite sides of the neck. Healing of the bone lesions followed but the patient developed tetany. Other surgeons have removed apparently normal glands with clinical success. Beck removed three parathyroid glands in one subject, two of which were adenomatous. The patient developed tetany on the fifth day and died on the twentieth day. Tetany theoretically should respond to the administration of parathormone or cod liver oil and calcium, but unfortunately such is not always the case. A single case of tetany following a subtotal thyroidectomy has been successfully controlled by Margolis and Krause who administered a chemical fraction of irradiated ergosterol, known as dihydrotachysterol.

Our experience in the treatment of all forms of hyperparathyroidism dates from May, 1931, when an extensive and completely disabling multiple bone cyst of the distal third of the femur rapidly healed in a patient who was being irradiated over the thyroid area for thyrotoxicosis. The rapid relief of pain and the uninterrupted and progressive regeneration of the diseased bone in this instance was responsible for the subsequent radiation treatment over the thyroid-parathyroid region of a considerable number of suspected hyperparathyroid subjects.

The rationale of radiation therapy in hyperactivity of the ductless glands is sound and abundantly proved by case histories collected from the entire civilized world. The informed individual is familiar with the results obtained in the treatment by radiation of the ovary, pituitary, thymus and the thyroid. As far as the thyroid and parathyroid glands are concerned there appear to be no contraindications to this form of therapy. Tetany has never been observed by any radiologist following irradiation of the cervical region for cancer when the dosage far exceeds that indicated for the control of hyperparathyroidism or thyrotoxicosis.

The modern radio therapist avoids skin reactions and skin damage. There are no unpleasant sequelae and no remote deleterious effects. It is our custom to deliver 200 roentgens to an area eight centimeters in width and fifteen centimeters in length extending downward from the level of the cricoid cartilage. This treatment is repeated daily for five days. Some relief of pain may occur before the end of the treatments. We have had occasion to repeat this series two and three times at intervals of six weeks, but as a rule no more than two series is required. In some of the more chronic and advanced cases associated with marked deformity and gross changes about a joint, especially of the spine, it has been our custom to irradiate the affected joint or joints very lightly as an adjunct to the control of parathyroid hyperfunction.

Relief from pain and cure of the constitutional disability may be expected in practically all cases. However, in subjects who have become disabled because of bony deformity or in the aged, the clinical results are disappointing. The normal erect posture and height can never be restored after a partial collapse of the vertebral bodies. In such subjects a permanent disability must be endured. Reparation of many cystic areas or recalcification of extensively demineralized bones is a protracted process, one that consumes as much or more time in reparation as elapsed in the development of the lesions, and this, as has been pointed out, is a matter of years.

In offering radiation therapy in the control of hyperparathyroidism, we submit a method which involves inconsiderable expense, no danger to life, no necessity for hospitalization and clinical results which are in the main satisfying.

CONCLUSION

Prompt relief from pain following irradiation of the parathyroid glands in any subject presenting clinical evidence of any of the various forms of hyperparathyroidism is a fairly reliable therapeutic test for the disease and continued radiation is a safe and highly efficacious therapeutic measure.

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THE JAUNDICED BLEEDER: CONTROL OF HEMORRHAGE THROUGH VITAMIN K THERAPY*

H. P. Smith, M.D., S. E. Ziffren, M.D., C. A. Owen, B.A., G. R. Hoffman, M.D., and Joseph E. Flynn, M.D.,
Iowa City†

It is our present purpose to discuss briefly the bleeding tendency which occurs so commonly in patients having obstructive jaundice or biliary fistulas. Recent developments have revolutionized our concepts regarding this subject and have placed in our hands a method of treatment which all but eliminates the prolonged bleeding which so commonly occurs at operation or from the wound after operation. We refer specifically to the use of Vitamin K in preparing the patient for operation, and in preventing abnormal bleeding during and after operation.

The development of our knowledge in this field has been particularly rapid in the last few years, and the progress has been due, above all, to a happy combination of clinical and laboratory methods in the hands of various workers. The fundamental consideration regarding these patients is the fact that they suffer from the lack of a newly recognized vitamin, Vitamin K. This vitamin has the solubility properties of fats, and like the latter it cannot be absorbed unless bile is present in the intestine. When bile is excluded from the intestine by biliary fistula or by common duct obstruction, the Vitamin K present in the food cannot be absorbed, and because of this the patient develops an abnormal tendency to bleed. In providing treatment, one may feed large amounts of the vitamin, along with bile or bile salt to help absorption. We wish, also, to present evidence to show, for the first time, that one of the new Vitamin K preparations, phthiocol, can be given intravenously in man. The outstanding advantage of this mode of administration is that the vitamin can be given during the postoperative period when nausea and vomiting make oral administration all but impossible.

It has now been amply demonstrated that the plasma of patients with Vitamin K deficiency contains an abnormally small amount of one of the important clotting principles, prothrombin, and this is the cause of the bleeding. In the

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†From the Department of Pathology, State University of Iowa. Aided by a grant from the John and Mary R. Markle Foundation. Funds for two research assistants were supplied by the Graudate College, State University of Iowa.

clinical care of these patients, it is necessary to have methods for the measurements of the prothrombin concentration in the blood, if one is to apply therapy intelligently. Until recently, the prothrombin methods have been complex and not well suited to every day clinical use. However, we have recently devised a simple bedside test, to be described below. This test can be applied with a minimum of preparation and equipment, and without special training in laboratory procedures. With the use of this test, repeated from day to day, it is possible to determine the Vitamin K requirements, and to judge the efficacy of the treatment already given.

THE DISCOVERY OF VITAMIN K

The discovery of Vitamin K dates back to the animal experiments of Dam[1] which were conducted in Copenhagen in 1929 and 1930. On feeding newly-hatched chicks a specially purified fat-free diet, he observed within two to three weeks the development of hemorrhages in the skin, mucous membranes, and other soft tissues. Dam, Almquist, and others[3 to 11] found that they could prevent the hemorrhages by adding small supplements of spinach, alfalfa or kale to the deficient diet. It was evident from these experiments that such foodstuffs contain an antihemorrhagic vitamin. By means of special tests, it was shown that none of the known vitamins was responsible, and that the vitamin was a new one. It was termed Vitamin K (Danish, "Koagulationsvitamine").

That this vitamin might be important in man was first suggested by the discovery that the prothrombin level is low in obstructive jaundice and in cases of biliary fistula.[12 and 13] Quick[14] made the fruitful suggestion that man might suffer from faulty absorption of Vitamin K because of the lack of bile in the intestine. This hypothesis was given an experimental test in animals by Greaves and Schmidt.[15] A report from our own laboratory[16] was the first one in which Vitamin K was shown to be of benefit in the treatment of the patient with obstructive jaundice. Immediately thereafter, a similar report was published by Butt, Snell and Osterberg[17] at The Mayo Clinic. Dam and Glavind[18] of Copenhagen reported successful treatment a little later. Since then we[19 to 21] have made further reports, both in man and in biliary fistula dogs, and additional clinical studies have been made by Olson[22] of Dubuque, by Stewart[23] of Boston, by Rhoads[24] of Philadelphia, and by the workers at The Mayo Clinic.[25 to 27] It would now appear that Vitamin K therapy has been placed on a sound clinical and experimental basis.

THE PREPARATION OF VITAMIN K

Our original work on the treatment of patients with Vitamin K was done with material extracted from alfalfa meal with the aid of high-test gasoline. The gasoline was removed by distillation, and the vitamin was emulsified in bile or in a two per cent solution of bile salts. The recent work at The Mayo Clinic was also done with material extracted from alfalfa, although some of their earlier work was done with Vitamin K extracted from fish meal. In both cases, the products contained many impurities, but when given by the oral route these impurities produced no harmful effects. In the studies reported by Rhoads, a cereal grass preparation, "cerophyl", was used. It is said to be somewhat richer in Vitamin K than is alfalfa meal, but when given as a powder instead of in the form of an extract, the product would appear to be rather bulky, and it is doubtful whether the dose administered is as large as one might desire.

Efforts to isolate and determine the chemical formula of Vitamin K were begun several years ago by Almquist of California, and in this earlier work he did succeed in obtaining Vitamin K in crystalline form,[28 and 29] although at room temperature the crystals melted and the vitamin appeared as an oil. Doisy and colleagues[30 to 33] of St. Louis, confirmed these findings of Almquist and showed, in addition, that a second type of crystalline material could be obtained from fish meal. It was evident from this that there were at least two types of Vitamin K, from a chemical standpoint.

Within the last two months much has been accomplished in several laboratories. It has been shown by careful chemical study that a rather large number of compounds have Vitamin K activity and several of these have been identified and synthesized.[34 to 40] The first compound in this group is one known as phthiocol. This is a compound which was isolated originally from the tubercle bacillus by Anderson[41] of New Haven. The compound was prepared synthetically in the laboratory of Dr. Anderson several years ago, but its Vitamin K activity was not suspected at that time. It is only in the recent report of Almquist and Klose[34] that this compound has been shown in animals to have the properties of Vitamin K.

Additional data are still need regarding the chemical structure of certain other compounds having Vitamin K activity, but the evidence thus far obtained would seem to indicate that all of them contain the ten carbon ring of naphthalene, together with an atom of oxygen in the one and four positions. This compound without further

modification, is known as naphthoquinone. In the case of phthiocol, whose formula is given below, the two position is occupied by a methyl group and the three position by a hydroxy group. One of the compounds discussed by Ansbacher contains the methyl group but not the hydroxy group, and evidence now at hand indicates that the Vitamin K extracted from alfalfa meal has a rather complex side chain in the place of the hydroxy group which is present in phthiocol.

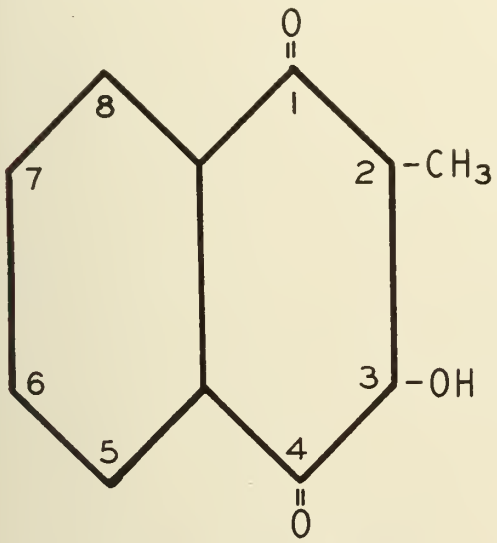


Fig. 1. Chemical formula of phthiocol.

Most of the componds in this group are almost totally insoluble in water, but phthiocol, fortunately, is soluble to the extent of about 0.2 per cent. We have conducted a number of experiments with this compound and have found it to have little or no toxicity, even when given intravenously, as in the two cases cited below. We cannot stress too strongly the fact that intravenous medication is vastly to be preferred over oral administration, because the jaundiced patient is particulary subject to nausea and vomiting. This is especially true in the postoperative period.

A "BEDSIDE" TEST FOR THE DETERMINATION OF PROTHROMBIN

The existing methods for the determination of prothrombin are too complex for routine clinical use. To meet the needs of clinics and general hospitals we[42] have found the following simple test to answer all essential requirements.

The test is carried out in a small serologic test tube of approximately three cubic centimeter capacity (75 by 10 millimeters). Into the tube is placed 0.1 of a cubic centimeter of a fluid extract of thromboplastin prepared in the manner to be described presently. The tube is then filled up to a 1.0 cubic centimeter mark with blood freshly drawn from the patient. To obtain prompt mixing of the blood and thromboplastin the tube is inverted once over the finger, and is then tilted gently every second or two in order that the beginning of clotting may be observed. In the case of normal blood, clotting occurs within twenty-five to thirty seconds, but if the prothrombin level is low, the clotting time may be prolonged to several times this figure. By using normal blood as a standard control we are able to express the patient's prothrombin activity in terms of the normal standard. The following formula will be found suitable:

$$\text{Prothrombin activity (in per cent of normal)} = \frac{\text{clotting time of normal blood}}{\text{clotting time of patient's blood}} \times 100.$$

For example, if the normal blood clots in thirty seconds and the patient's blood clots in ninety seconds, we can then calculate that the patient's prothrombin activity is 33 per cent of normal.

The only technical feature in the entire procedure described above is the problem of preparing the thromboplastin solution. With an average amount of care this is a very simple matter. Fresh lung tissue (ox or rabbit) is cut into fine pieces with scissors or with the aid of a meat grinder. To each ten gram portion of the ground lung are added ten cubic centimeters of ordinary physiologic saline (0.9 per cent sodium chloride). The mixture is stirred occasionally for the next two hours, after which it is strained through several layers of gauze. The pinkish opalescent fluid thus obtained is the thromboplastin used in the above test. It keeps well for several weeks in the ice box, or better still in the frozen state. It is measued out in 0.1 of a cubic centimeter portions with the aid of a one cubic centimeter serologic pipette calibrated at intervals of 0.01 of a cubic centimeter. If the thromboplastin disintegrates to the point that normal blood gives a clotting time of fifty seconds or more, the material is considered unsuitable for use and is discarded. In performing the test it is very important that the blood be drawn free of bubbles, and that the syringe and needle be absolutely free of clots. Minute traces of thrombin influence the test, and if great difficulty is experienced in gaining entrance to the vein the sample should be discarded, and another sample collected with clean equipment.

In the case cited below we have charted the results obtained with this test, and in the same charts we have shown the results obtained with the more complicated method described in our previous papers.[43 and 44] The excellent correlation between the two methods will be seen in each

case. It will also be noted that there is an excellent correlation between the bleeding tendency observed clinically and the prothrombin levels obtained with either test. The rise in prothrombin level obtained by means of Vitamin K therapy also corresponds to the improvement noted clinically.

REPORT OF CASES

During the past two years we have had the opportunity of studying about sixty cases of biliary tract disease, and in most of these instances the patients had jaundice, together with a varying degree of prothrombin deficiency. A number of these cases have been reported, and from the unreported group we are now selecting four cases to illustrate a number of the problems which commonly arise in such patients.

Case 1. A woman, forty-two years of age, had right upper quadrant pain in December, 1937. Cholecystectomy was performed three months later, and for several months thereafter there was intermittent drainage of bile at the operative site. At a second operation, September 23, 1938, an inflammatory stricture of the common bile duct was reported. A choledochostomy was performed, and bile then drained continuously to the outside. The patient was first seen at the University Hospital on November 2, 1938. The plasma prothrombin level was 42 per cent of normal. This was considered to be too low to allow operative procedures, and for this reason the patient was given a five day period of treatment with Vitamin K. The prothrombin rose to the 72 per cent level. The patient was allowed to return to her home, and was instructed to drink the bile which drained from the wound, but was not given any Vitamin K. She returned to the hospital on January 13, 1939, without any apparent change in her general condition. The prothrombin had fallen again to the 40 per cent level, as shown at the beginning of Chart. 1. It is evident that the consumption of bile, without the supplement of Vitamin K, was not effective in maintaining the prothrombin at a safe level. Under hospital management, the patient was again placed on Vitamin K therapy. The daily dose of Vitamin K was the amount which could be extracted from 300 grams of alfalfa meal. To aid in the absorption, the vitamin concentrate was emulsified in the daily dose of bile salt or of ox bile (30 cubic centimeters daily). Chart 1 shows that the prothrombin gradually rose to the normal level. This rise is slower than that usually observed. This illustrates the need of a prothrombin test to indicate how long the treatment must be continued before operation can be undertaken.

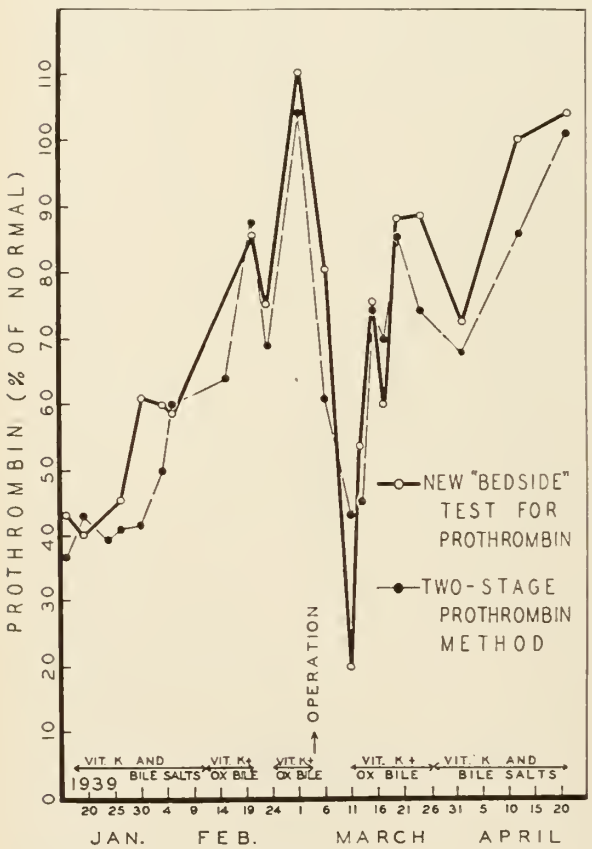


Chart 1. Plasma prothrombin levels in Case 1.

As soon as the prothrombin had reached the normal level (March 4), an attempt was made by Dr. J. W. Dulin to reconstruct the common bile duct. As a part of the procedure a temporary biliary fistula was established. During the next eight days, the chart shows that there occurred a precipitous fall in the prothrombin to about the 30 per cent level. A fall of this type is a very common occurrence in such patients. It is due in part to the excessive utilization of prothrombin in the formation of fibrin exudate in the margins of the wound. It may also be due, in part, to liver injury, caused by operation or by the anesthetic. This is in accord with our evidence that the liver is concerned in the manufacture of prothrombin.[44 and 45] The fall in the prothrombin level in this particular case could probably have been prevented if Vitamin K had been given during the first few days after the operation. Unfortunately the patient was nauseated and was unable to retain the vitamin during this period. As shown in the chart, the administration of Vitamin K was resumed on March 12, and a

dramatic rise in the prothrombin to normal levels occurred at once.

Case 2. A woman, thirty-nine years of age, had a history of gallbladder attacks for fourteen years. Cholecystectomy was performed fourteen months previously, and bile had drained from the wound for several months. Four months following closure, she suddenly developed nausea and vomiting, accompanied by pain in the right upper quadrant, and followed by gradually increasing jaundice (van den Bergh's direct test, 12). The stools were clay colored and the urine dark brown. Operation on March 24, 1939, by Dr. F. R. Peterson showed stricture of the common bile duct. Preliminary steps in the reconstruction of the

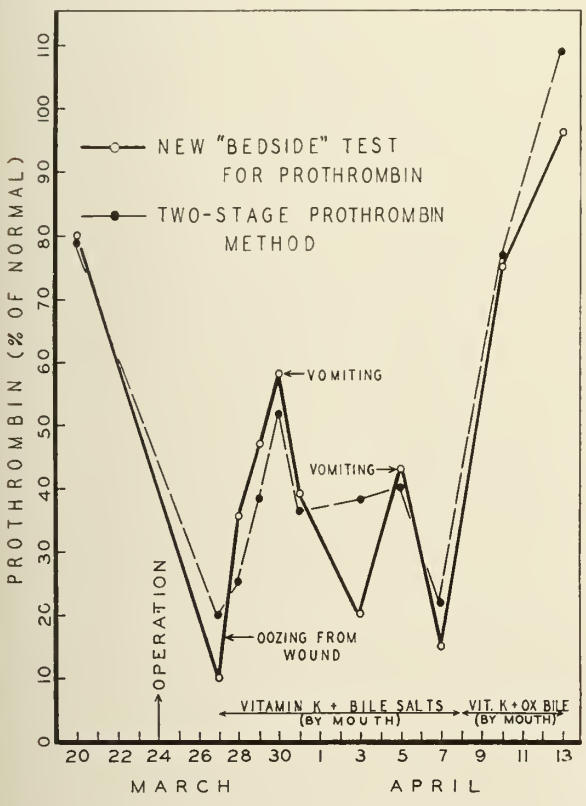


Chart 2. Plasma prothrombin levels in Case 2.

common bile duct involved the creation of a temporary biliary fistula. At a second operation, five weeks later, the continuity of the bile duct with the intestine was reëstablished. The patient recovered, and has remained free of symptoms.

The plasma prothrombin levels are shown in Chart 2. As in the previous chart the two prothrombin methods employed gave essentially identical results. The 80 per cent level prior to operation is not in the bleeding zone, but evidently the prothrombin reserve was scanty, for after the operation on March 24, the prothrombin fell to about 15 per cent of normal, and at this point blood began to ooze from the wound. This case, like Case 1, illustrates the postoperative fall due, as in that instance, to difficulty in administering the vitamin and bile during the first few days after operation. As soon as the bleeding began, the therapy was given energetically for three days and the prothrombin rose promptly to the 55 per cent level. At this point vomiting prevented further administration of the vitamin and the prothrombin level again declined. Another period of vomiting on April 5 caused an additional fall. Beginning on April 7 the vomiting ceased and with adequate dosage of Vitamin K the prothrombin level rose rapidly to normal.

Case 3. A woman, forty-four years of age, had had upper abdominal distress since November, 1938. In March, 1939, she developed pain in the right upper quadrant and gradually developed jaundice. The stools became clay colored; the

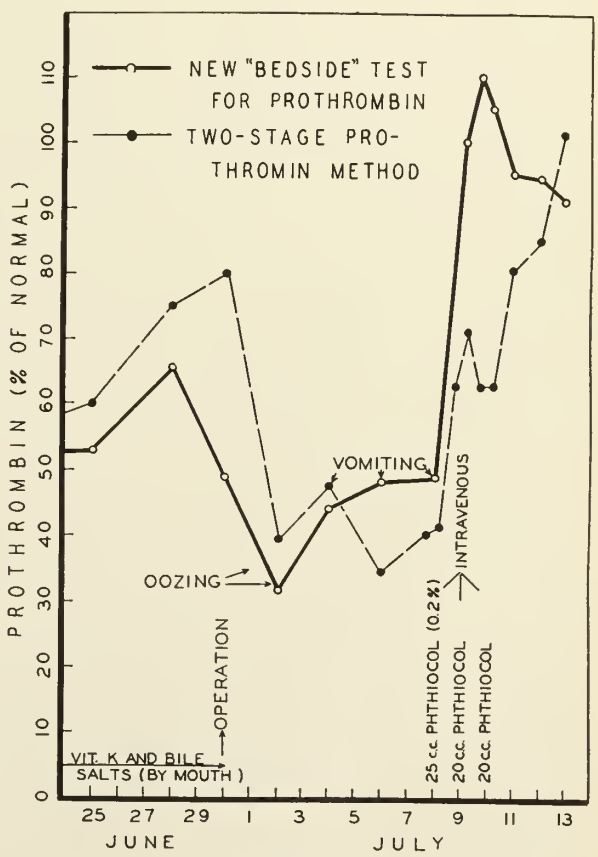


Chart 3. Plasma prothrombin levels in Case 3.

urine was dark. A mass could be palpated in the right upper quadrant when the patient entered University Hospital June 8, 1939. The prothrombin level was between 50 and 60 per cent of normal (Chart 3). During the first two weeks

of her stay in the hospital, Vitamin K and bile salt were given by mouth (300 grams equivalent of alfalfa meal plus 30 cubic centimeters of two per cent bile salt daily). During this period there was considerable vomiting, and relatively little of the Vitamin K was retained. During the following four days, the vomiting subsided, and as a result of the treatment the prothrombin gradually rose to about the 70 per cent level. Operation by Dr. F. R. Peterson showed carcinoma involving the bile duct, in the region of the ampulla. Cholecystgastrostomy was performed. Following operation, the chart shows a fall in the prothrombin level, and several efforts to administer the vitamin were unsuccessful because of vomiting. On July 8 the prothrombin level was still about 40 per cent of normal. At this time we gave several intravenous injections of phthiocol supplied through the courtesy of Dr. R. J. Anderson of New Haven. The first injection of five cubic centimeters was made during the evening of July 8, and an additional twenty cubic centimeters were given four hours later. The patient experienced no nausea whatever. There was no chill, nor was any temperature reaction observed. On the following morning, the prothrombin level, by both prothrombin methods employed, had risen at least 30 or 40 per cent. At the same time an additional injection of twenty cubic centimeters was made, and on the following morning twenty cubic centimeters were given in the same manner. The chart shows a rapid uphill trend of the prothrombin curve to normal levels. For reasons not entirely known at present, the results obtained by the bedside test rose more rapidly than those obtained with our two-stage method.

We wish to stress the fact that in this case the patient was afflicted with nausea and vomiting for a considerable period of time following operation, and our attempts to give the vitamin by the oral route were unsuccessful because of this. The intravenous administration obviated this difficulty altogether, and provided a simple method whereby prothrombin could be restored rapidly to normal levels. If the intravenous administration had been started within a few hours after operation the fall in prothrombin would probably not have occurred.

Case 4. A woman, thirty-eight years of age, entered the hospital July 15, 1938, stating that she had been troubled with "gallbladder disease" for nearly a year, and that a surgeon had removed the gallbladder in October of 1937. A biliary fistula had persisted intermittently since that time. On entering the University Hospital the prothrombin level was 37 per cent of normal. Vitamin K therapy given by mouth failed almost entirely to have the usual effect in this patient. In spite of energetic treatment the prothrombin did not rise above the 55 per cent level. The patient had very little fever during this period, and the reason for the poor response was not evident. On August 23, Dr. Azel Ames performed a laparotomy and found extensive scarring and stricture formation in the lower portion of the common duct. An attempt was made to reconstruct the tract by means of a rubber tube connecting the duodenum with the stump of the common duct. Following relief of the obstruction, and with suitable administration of bile and Vitamin K, the prothrombin level returned to normal within the next three weeks.

The patient was then discharged, but during December of 1938, all the symptoms, including jaundice, reappeared. However, examinations of the stools indicated that the obstruction was not complete. She reëntered the University Hospital on May 15, 1939, with a prothrombin level 86 per cent of normal. On May 29, an effort was made to reconstruct the common bile duct, and pending completion of this operation, bile was allowed to drain externally. Following operation, there was considerable nausea and no effort was made to administer Vitamin K. The prothrombin level fell in two days to about 30 per cent of normal, but recovered to the 50 per cent level the following week. Since that time the patient has had almost continuous fever at a level of about 101 degrees. There was considerable loss of weight, and considerable infection about the drainage wound. An attempt was made to administer Vitamin K by mouth during the middle of June but this was discontinued because of vomiting. On July 10, the prothrombin level was 55 per cent of normal. On the afternoon of this day, twenty cubic centimeters of 0.2 of a per cent of phthiocol solution were given intravenously. On the following afternoon, the prothrombin was found to have risen to the level of 70 per cent, and at that time an additional fifty cubic centimeters of the phthiocol solution were given intravenously. The prothrombin rose to the 85 per cent level on the following day, and to the 95 per cent level on the morning after that. There was no evidence of toxicity as a result of the injection. Fever had been present prior to injection but was not augmented as a result of it, nor was there any nausea.

The phthiocol used in Cases 3 and 4 was made up in an isotonic saline buffer solution (to 100 cubic centimeters 0.05 M phosphate buffer, *p*H 7.4, add 0.56 g. NaCl plus 0.2 g. phthiocol. The

phosphate buffer is prepared by mixing 50 cubic centimeters 0.2 M KH_2PO_4 and 39.5 cubic centimeters 0.2 M NaOH, and diluting the mixture to 200 cubic centimeters with distilled water).

COMMENT

It would seem probable that the impure concentrates of Vitamin K now on the market will eventually be replaced with chemically pure compounds having the advantage of stability and predictable dosage. It is obviously more convenient to administer the vitamin by the oral route, but if the patient is nauseated there are great advantages in giving the purified material intravenously. The workers at The Mayo Clinic[27] have found that in certain intestinal disorders the absorption of Vitamin K may be difficult, even if bile is present in the gut. Case 4 of our series, which responded so poorly to oral administration of the vitamin, may be a case in which faulty absorption was present even though the intestinal tract was not obviously diseased. We have had a limited amount of experience with the administration of the vitamin in the form of enemas but have not found any distinct rise in the prothrombin level. A number of the compounds having Vitamin K activity are highly insoluble in water, and this fact detracts from their usefulness when intravenous medication is being considered. The compound, phthiocol, given intravenously in Cases 3 and 4, is moderately soluble. It is entirely possible that other compounds in this series will be found to be even more soluble than this. It need hardly be noted that these compounds must be studied carefully from the toxicologic point of view. We have made rather extensive studies in the case of phthiocol and we have given relatively enormous doses intravenously to animals without producing any febrile reaction. Relatively large quantities were mixed in the test tube with oxalated blood and in these experiments we have been unable to detect any evidence of hemolysis. One should not overlook the fact that in compounds of this type one may find occasional patients who have an idiosyncrasy toward the drug, but much more experience will be needed before this question can be answered.

SUMMARY

Evidence is reviewed to show that in patients with obstructive jaundice or with biliary fistulas, the bleeding tendency, so commonly observed, is due to faulty absorption of a fat-soluble vitamin, Vitamin K. By suitable administration of this vitamin, the bleeding tendency can be corrected, thus eliminating one important cause of high mortality in the surgical treatment of these cases. In order to determine the degree of Vitamin K deficiency and to gauge the dosage of vitamin to be administered, it is necessary to have data in each case regarding the plasma prothrombin level. A simple bedside test for the measurement of this level is described. The various methods of administering Vitamin K are discussed and it is shown that purified preparations of Vitamin K may be administered safely intravenously in those cases where nausea and vomiting preclude administration by the oral route.

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Discussion

Dr. Paul F. Olson, Dubuque: I am sure we are all very grateful to Dr. Smith for a contribution that has such a valuable clinical application. The tendency of the jaundiced patient to bleed has always been a major problem in biliary tract surgery, and until recently we have had no means whereby we could be forewarned of an impending hemorrhage. A few years ago Dr. Smith devised a two-stage determination for prothrombin in the blood which was most precise, but rather too complicated for practical clinical use. Today he has presented a prothrombin test that is not only accurate, but is so simple that it can be carried out at the patient's bedside.

When an obstruction has been removed from the bile duct and the flow of bile into the duodenum has been re-established, the patient is on his way to recovery. There is, however, an interval of days between the time of the operation and the time when the patient is able to utilize the benefits of the operation, and it has been during this interval that patients have suffered severe and often fatal hemorrhages. The anesthetic and the shock of the operation further depress the prothrombin content of the blood and the surgical incision opens a capillary bed which invites hemorrhage. Until the advent of the Vitamin K therapy we had no means of dealing with these hemorrhages other than by blood transfusion. Transfused blood replaces some of the blood lost by hemorrhage and also provides some prothrombin from the donor. However, the prothrombin thus supplied is insufficient, and the hemorrhage usually recurs in from a few hours to a few days. Faced with an acute postoperative hemorrhage, transfusion retains its value as an emergency measure since the prothrombin thus supplied is immediately available, while prothrombin obtained from Vitamin K fed by mouth is not available in the blood stream for from twelve to twenty-four hours.

Every jaundiced patient should be subjected to a prothrombin test before operation, and if the prothrombin is found to be reduced, Vitamin K and bile salts should be given preoperatively; usually treatment for from three days to a week will suffice. After operation, the Vitamin K and bile salt therapy should be resumed as soon as the patient can tolerate medication by mouth, and should be continued as long as the test indicates a tendency to bleed. The tests for prothrombin should then be made every few days until it is apparent that the patient is beyond danger of hemorrhage. In this way it is hoped and expected that hemorrhage in jaundiced patients can not only be controlled but prevented.

Dr. Smith and his associates at the State University have contributed largely to the development of the Vitamin K therapy for the bleeding in jaundiced patients, and today Dr. Smith has presented a test for that bleeding tendency which is so accurate and so available I am sure it will soon be a standard procedure in all hospital laboratories.

ACUTE PELVIC LESIONS IN THE FEMALE, DIAGNOSIS AND MODERN MANAGEMENT*

C. W. SEIBERT, M.D., Waterloo

Of all parts of the human body the female pelvis is probably more often afflicted with acute lesions, usually sudden in their onset and at times producing a rather dramatic symptomatology. The general practitioner as well as the general surgeon and gynecologist is frequently confronted with these lesions, and a correct interpretation of the symptomatology and clinical findings is at times most difficult. A correct diagnosis is now doubly important because we now feel that many acute conditions are not at least immediately surgical but are much better managed by conservative

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means. Twenty years ago this was much less true. Practically all pelvic lesions were treated by laparotomy, the final diagnosis often being made at the operating table.

The pelvic inflammations comprise the largest group of acute lesions. Pelvic inflammatory disease is generally considered to be inflammation of any of the pelvis outside the uterus and may involve the fallopian tubes, ovaries, parametria, pelvic cellular tissue and pelvic peritoneum. The term truly means inflammation of pelvic tissue whether caused by gonorrhea, postpartum or postabortal infection, or arising from an extra pelvic lesion such as an appendiceal abscess. The gonococcus is by far the most frequent organism producing pelvic inflammation. It is introduced into the lower genital tract almost always by coitus with an infected individual, the organism becoming lodged in Skene's and Bartholin's glands or the glands lining the cervical canal. In seven to ten days following exposure the patient is conscious of an increasing vaginal discharge, and often burning and smarting and frequency of urination. These symptoms may be so mild that the patient does not notice them. Many are unaware that anything is troubling them until they are seized with sudden abdominal pain heralding the onset of acute salpingitis.

In the management of an acute lower tract gonorrheal infection one must always keep in mind that such an infection tends to be benign and self limited. Too active therapy may result in an extension of the inflammation upward. I am convinced that many patients are harmed by too active therapy in the acute stage. As soon as the diagnosis is made (and one should not make such a diagnosis until positive smears are obtained), the patient should be instructed to limit her activity to an absolute minimum. Instrumentation and application of strong antiseptics to the cervix should be avoided, as well as high pressure douches, since by this means the barrier at the internal os may be broken down, and a rapid extension of the disease process upward will result. Fluids should be forced and the patient should be on a simple diet. In the past two years sulfanilamide has been used extensively in the treatment of acute gonorrhea both in the male and female. Although it is perhaps too early for an accurate evaluation of its true merit, it is the consensus that it is of great value in the majority of instances and is worthy of trial. The usual dosage is sixty to eighty grains daily for the first two days with a gradual decrease after this time. Under this regime of judicious inactivity the lower tract infection will die out or become chronic and the patient will escape an upper tract infection. As we have before stated many women have acute gonorrhea of the lower genital tract without being aware of it and hence go about their daily activity taking no precautions and indulging in sexual relations as usual. It is in this group of patients that the incidence of upper tract infection is greatest.

Usually during a menstrual period when the cervix is open the infection extends up into the uterus, setting up an endometritis which is only transient in nature, probably because the endometrium sloughs away with each period. It is a well known fact that the gonococcus extends along epithelial surfaces and hence the infection spreads to the fallopian tubes by way of the endometrium. The inflammatory process in the tube begins in the musoca but finally all coats are involved. The tubes become swollen and congested and the fimbriae are turgid and angry; infective purulent material may leak from the abdominal ostium. The fimbriated extremity is swollen and is usually quickly closed, either by inversion of its peritoneal covering and adhesion of the serous surface of the fimbria, or by pouting of the mucosa, which allows leakage and produces adhesions between the tube and ovary. This is the starting point in the formation of a tubo-ovarian abscess. The abdominal ostium may less frequently become adherent to bowel or pelvic parietal peritoneum. Before this process has developed for many hours one or both tubes become closed and pus begins to accumulate under tension.

The symptoms of acute salpingitis are usually initiated by sharp colicky, intermittent, lower abdominal pain quite severe in nature. Associated with this is an elevation of pulse and temperature. Nausea and vomiting may be present, but are more frequently absent. Examination of the abdomen reveals marked tenderness in both lower quadrants; rigidity and rebound tenderness are frequently present, especially if there is an associated pelvic peritonitis. Vaginal examination usually reveals acute tenderness throughout the pelvis. Movement of the cervix and uterine fundus causes severe pain due to tugging on the pelvic peritoneum. If the process is in the early stage nothing but tenderness may be noted in the adnexal regions; later, however, bilateral adnexal masses are present.

The differential diagnosis of acute gonorrheal salpingitis is frequently most difficult. It is most likely to be confused with acute appendicitis and ectopic pregnancy. Needless to say its differentiation from these conditions is most important since their treatment is immediately surgical. In acute appendicitis the temperature usually does not go above 100 degrees,[4] unless the appendix has rup-

tured, whereas in acute salpingitis the temperature frequently reaches 103 degrees with a corresponding rise in pulse. The leukocyte count in acute salpingitis is likely to be higher, occasionally being 23,000 or more, whereas in uncomplicated acute appendicitis the count usually does not exceed 17,000. The point of maximum abdominal tenderness is also helpful; in acute appendicitis it is located at McBurney's point, and in salpingitis it is usually one and one-half inches lateral to the midline and at the junction of the middle and lower third of the distance between the symphysis and umbilicus.

The final diagnosis, however, often rests upon the findings during the pelvic examination. The importance of a careful examination cannot be overstressed. The patient should be in the lithotomy position, preferably upon an examining table; if none is available she should lie crosswise in the bed. The physician should be absolutely certain that the bladder is empty, since this is a very common cause of confusion. Pelvic findings are misinterpreted many times because of a full urinary bladder. Evidence of a lower tract infection should be carefully searched for, such as thickened Skene's tubules or palpable Bartholin glands. The uterus should first be located and its mobility carefully noted, special attention being paid to tenderness on movement of the uterus. The adnexa should now be carefully palpated and again their size and mobility should be carefully noted. The definite palpation of enlarged tender tubes will settle the diagnosis. In some cases the differentiation will be impossible to make, and exploration will be necessary. Upon finding an acute salpingitis at operation no blanket rule can be laid down as to what procedure to follow but Mussey[5] has summed up the situation very well when he states that "many experienced surgeons have closed the abdomen without removing tissue other than the appendix".

In differentiating ectopic pregnancy from acute salpingitis the menstrual history is of value: there is almost always some irregularity present, usually the period being seven to ten days late. Acute salpingitis on the other hand is more likely to develop immediately following a period. The temperature and leukocyte count are again of value, the elevation being much more pronounced in salpingitis. The pelvic findings in both conditions may be similar. The presence of an unilateral mass is of course in favor of ecotopic pregnancy. There will be marked tenderness through the pelvis in both conditions. When there is a collection of blood in the cul-de-sac this cannot be differentiated from a pelvic abscess and here needling of the cul-de-sac is necessary to settle the issue.

In consideration of the treatment of acute salpingitis it is important to remember one rule, namely, that the only indication for operation in the treatment of acute pelvic inflammatory disease is the evacuation of pus. As soon as the diagnosis of acute salpingitis is made the patient should be placed on absolute bed rest preferably in a semi-Fowler position. Fluids should be forced at least moderately and pain may be controlled with codeine. The bowels should be kept reasonably open with mineral oil and low pressure enemas; harsh cathartics should be avoided. Before the introduction of sulfanilamide no specific therapy was available. Although it is not universally successful, it should usually be given in doses of sixty to eighty grains daily. The usual precautions incident to sulfanilamide therapy should be carried out. The entire therapy of acute salpingitis is based on the premise that acute gonorrhea in the female is a self limited disease and if allowed to run its course will burn itself out. No longer should acute salpingitis be considered in the same light as appendicitis. We have long since learned that acutely inflamed tubes do not rupture and when a leak does occur it is quickly walled off in the pelvis. Not infrequently in the course of an acute salpingitis, pus gravitates into the cul-de-sac, becomes walled off and a pelvic abscess is formed. This is felt as a tender fluctuant mass obliterating the posterior vaginal fornix. This condition should always be kept in mind and must be strongly suspected in the event of prolonged fever or a sudden rise in temperature after it had apparently been on the down grade.

With the diagnosis of a pelvic abscess we have a definite indication for drainage. Three methods for drainage of pelvic abscess have been in vogue.[2] Drainage from above by laparotomy was the first method used, but has justifiably fallen into disuse. Its disadvantages are obvious. The general peritoneal cavity is soiled and adequate drainage is impossible. Another disadvantage of this method is the chronic draining abdominal sinus that frequently develops. Another method is simple vaginal puncture. This is superior to the abdominal route but still does not give adequate drainage. The ideal procedure is posterior colpotomy. This is done with the patient in lithotomy position and under general anesthesia. The cervix is grasped and pulled down following which a large bore needle is inserted into the abscess staying close to the cervix. When pus is obtained a small incision is made in the vaginal mucous membrane following which a hemostat is inserted along the needle

into the abscess. The finger should then be inserted into the abscess and any locules present broken into, after which a T-tube drain should be inserted. It may be left for from four to seven days, depending on the amount of drainage present.

The cellulitic type of pelvic infection almost always follows an obstetric episode either an abortion or full term delivery. The causative organism is predominantly the streptococcus and its mode of extension and spread is quite different from that of the gonococcus. In place of extending along the surfaces of mucous membranes, the streptococcus invades directly through the placental site, entering the blood vessels and lymphatics. The inflammation extends laterally between the leaves of the broad ligaments and many times involves much of the cellular pelvic tissue. The initial symptom is frequently a chill followed by a high fever and elevated pulse. The patient appears quite ill, but usually complains of no pain. Diagnosis is better made by rectal than by vaginal examination, since the parametria are much easier palpated in this manner. On rectal examination one or both parametria will be indurated and tender. On many occasions the induration will extend to the lateral pelvic wall. True salpingitis is seldom present, although when the pelvic peritoneum becomes involved a perisalpingitis develops.

The treatment of these infections is almost entirely supportive. The patient should be completely at rest in a semi-Fowler position. Fluids should be forced and the diet should be light, but with adequate calories. Repeated small blood transfusions are of great value. They should be given regularly every third day, since it has been well established that there is no advantage in more frequent transfusions. Transfusions should be repeated in amounts of 250 to 300 cubic centimeters until the temperature begins to subside. Sulfanilamide should be given in doses of forty-five to eighty grains daily. Unless a definite collection of pus forms, surgery should not be contemplated. Occasionally a pelvic abscess develops and should be treated as above described. Not infrequently a massive infiltration develops between the leaves of one of the broad ligaments, producing a mass palpated in the lower abdominal quadrants. The simple presence of such a mass, however, is no indication for drainage; often no pus is present. If the mass continues to enlarge and shows evidence of fluctuation, drainage must be carried out. It is a distinct mistake to attempt to drain a broad ligament abscess through a suprapubic incision, because the general peritoneal cavity is inevitably soiled and fatal peritonitis frequently develops. The incision should be made over the mass paralleling Poupart's ligament. In this manner the abscess is drained extraperitoneally. Most men prefer not to drain these abscesses unless absolutely necessary for they have a tendency to drain for weeks and in many cases for months.

Ectopic gestation is a condition which must always be remembered in every woman who has an acute abdominal condition. From available statistics ectopic pregnancy occurs once in every three hundred pregnancies, although the true ratio is actually higher than this because of the many which are undiagnosed. The condition accounts for over three per cent of our maternal mortality rate.

The definite etiology of ectopic pregnancy has never been clearly established, although any condition which retards the passage of the fertilized ovum through the fallopian tube to the uterus predisposes to ectopic pregnancy. Conditions that immediately come to mind are chronic salpingitis, congenital kinks or strictures, and tumors producing pressure from without. Frankel[14] and his co-workers have recently advanced the interesting theory that all ectopic pregnancies are primary, the fertilized ovum attaching itself to a previously existing area of ectopic endometrium. It is rather difficult for most of us to explain all ectopic pregnancies in the light of this hypothesis. The great majority of ectopic pregnancies are tubal in nature, although occasionally they are attached to the ovary, or more rarely are entirely abdominal. Of the tubal variety the location is about equally divided between the isthmus and ampulla; three per cent are interstitial.

We are all familiar with the textbook picture of ectopic pregnancy; namely, history of a menstrual period ten days past due, sudden sharp abdominal pain followed by collapse and all of the symptoms of acute and massive hemorrhage. Unfortunately, however, the diagnosis is seldom this simple and many times the condition is very difficult to establish. A carefully taken history is of utmost importance; 74 per cent of the patients will give a history of a missed period, the menses usually being ten days to three weeks past due. This symptom may be difficult to evaluate because many women normally have that much irregularity of their menses. Irregular vaginal spotting occurring after the expected date of the period is a very important sign, especially if it is associated with lower abdominal pain. The bleeding is often not bright red in color, but dark brown, due to the decidua sloughing away after the death of the ovum. At times a true decidual cast of the uterus may be passed which is often mistaken for an abortion of an intra-uterine pregnancy.

The findings on pelvic examination are helpful

but they may easily be confusing. If the pregnancy has not ruptured, a sausage-shaped mass will be palpated in the region of the involved adnexa. When rupture has been recent, very frequently no distinct mass will be present, only a doughy sensation being imparted to the examining finger by the free blood in the pelvic cavity. In these cases one often notes an intense tenderness. When the pregnancy has been ruptured for some hours, a pelvic hematocele is formed, which is encapsulated in a membrane of organized blood, and which is adherent to the bowel and other neighboring visceras.

Ectopic pregnancy is most likely to be confused with acute salpingitis and threatened or incomplete abortion. In salpingitis the tenderness is more definitely bilateral and usually both adnexa are enlarged. The temperature and white count in salpingitis are definitely elevated, and in ectopic pregnancy these are normal or only slightly elevated. In threatened or incomplete abortion the bleeding is usually more profuse and the uterus will show definite enlargement; the cervix will often be soft and patulous, and placental tissue may be presenting at the os.

The Friedman test has been somewhat overrated as a means of differential diagnosis because it is positive only in the presence of an unruptured pregnancy, and becomes negative quickly after the death of the ovum. The most valuable procedure, and one which seems to be employed all too infrequently, is needling of the cul-de-sac or posterior colpotomy. It should be done under general anesthesia since an excellent opportunity is afforded for a careful pelvic examination with the patient completely relaxed. A large bore needle should be used and care should be taken to insert the needle through the vaginal wall following along the posterior aspect of the cervix. If fresh or old blood is aspirated, the diagnosis of ectopic pregnancy is practically certain and one may then proceed with laparotomy. If pus is obtained a colpotomy opening should be made as previously described and the abscess drained. If nothing is obtained on aspiration no harm has been done and frequently an unnecessary laparotomy is avoided.

When the diagnosis of ectopic pregnancy is definitely made the treatment is immediate laparotomy. When the tubal rupture is acute with massive hemorrhage producing shock, an intravenous infusion of normal saline should be started simultaneously with the operation. Donors should be obtained and preparations made for transfusion. The bleeding point should be quickly isolated and clamped. When a large amount of free blood is present in the peritoneal cavity it should be dipped out in a sterile container, the clots strained out and replaced intravenously.

No hard and fast rules can be laid down as to what procedure should be carried out, but in general we can say only necessary surgery should be done. As a rule the tube and ovary on the affected side must be removed, although if the ovary is not involved it may be left, providing its blood supply is not too seriously interfered with. If the tube on the opposite side is clubbed and shows evidence of old inflammation many surgeons ligate it to prevent the occurrence of ectopic pregnancy on that side.

When an old hematocele is present one must exercise great care in dissecting it free because it is very adherent to the bowel which is friable and easily torn. It is far better to leave the hematocele membrane which is adherent to the bowel undisturbed. The abdomen should be closed without drainage; no infection is present and a drain only acts as a foreign body.

Ovarian cysts, although not common lesions, are rather prone to produce acute sumptoms due to a sudden torsion of the pedicle shutting off the blood supply. The predisposing factors to torsion are a long pedicle and a sudden change in intra-abdominal pressure. This explains the relative frequency of torsion of the pedicle following pregnancy. The symptoms are initiated by sharp stabbing lower abdominal pain which may become very intense. There is often nausea and vomiting. Fever and leukocytosis are present, but do not become marked until the process has developed over a period of hours. If the condition is allowed to exist for many hours the cyst frequently becomes gangrenous, and rupture may occur. If the tumor is a dermoid cyst the spilling of the cyst contents sets up an intense chemical peritonitis. On many occasions the tumor cannot be felt through the abdomen because of its size. On pelvic examination the tumor can usually be felt as a tender, cystic unilateral mass. It can be moved, which helps to differentiate it from a mass of inflammatory origin.

The diagnosis of ovarian cyst with twisted pedicle is not difficult as a rule, providing one thinks of the condition. It is most likely to be confused with acute appendicitis, but this is usually because a pelvic examination is not done.

The treatment is surgical as soon as the diagnosis is made. Davidson[10] has called attention to the increased incidence of embolic phenomena following operation, and advocates clamping the pedicle below the area of torsion before untwisting it. At operation one should carefully inspect the other ovary to be certain that a cyst is not present on the other side.

Occasionally the physiologic rupture of the ovarian follicle may produce acute abdominal symptoms. This is due to an excessive amount of hemorrhage which produces severe lower abdominal pain. The hemorrhage may occasionally be very profuse; Jones[9] has reported a case in which 1,500 cubic centimeters of blood were found in the peritoneal cavity. The symptoms are similar to appendicitis, although they are usually milder and the abdominal tenderness is lower. Leukocytosis may be present, but it seldom goes higher than 13,000 per cubic millimeter. The menstrual history is of great importance because the condition always occurs during the mid-menstrual period. At times it will be impossible to differentiate this condition from appendicitis, and laparotomy will be necessary. The procedure of choice at operation will depend upon the findings. Occasionally it will be necessary to remove the affected ovary, although usually it will be possible to resect or peel out the hemorrhagic portion.

Discussion

Dr. Addison W. Brown, Iowa City: Dr. Seibert is to be commended upon the very complete outline he has presented on acute pelvic lesions in the female, and in discussing his paper only certain points will be re-emphasized.

The most common acute lesion of the pelvis is gonorrheal pelvic inflammatory disease. About 20 per cent of the cases of lower tract gonorrhea develop a salpingitis, or ascending infection. The aim of the treatment is to localize the infection to the pelvis, and to build up, by general supportive measures, the resistance of the patient. Inasmuch as these infections are self-limited and usually respond promptly to conservative medical management, we feel that immediate surgery for the removal of the tubes is entirely unwarranted. We agree with Dr. Seibert that accumulations of pus which may follow an acute pelvic inflammatory disease should be drained by the vaginal route. About 85 per cent of the patients with acute pelvic inflammatory disease seen at the University Hospital recover completely on conservative medical management. The remaining 15 per cent will be incapacitated because of pain or irregular vaginal bleeding, and subsequently may require some operative procedure for the relief of these symptoms. Abdominal surgery, such as the removal of the tubes, is never indicated until the infection has become chronic, and then should be resorted to only if other conservative measures have failed to give relief.

Pyogenic infections of the pelvis, as Dr. Seibert has pointed out, usually follow some obstetric episode, such as a criminal abortion, or less commonly, a full term delivery. These infections are extraperitoneal and involve the parametrial or pelvic cellular tissues. These infections usually resolve completely on conservative management, but an occasional case may go on to abscess formation. The abscesses are extraperitoneal and usually point about Poupart's ligament where they can be easily drained. They should not be drained through the vagina because of the danger of injury to the ureters and large blood vessels. It has been our experience that a cul-de-sac abscess rarely follows this type of pelvic infection. In septic abortion we never curet the uterus except in those cases of exsanguinating hemorrhage which cannot be controlled by other safer means.

Ectopic pregnancy often presents a problem of differential diagnosis. In our experience ectopic pregnancy is often confused with threatened or incomplete abortion. If the patient has missed two or three menstrual periods, and is having vaginal bleeding and pain, the condition is most likely to be due to some type of abortion of a uterine pregnancy, but if she has missed only one period one must think strongly of ectopic pregnancy. In other words, the majority of uterine abortions occur during the second and third months, while the majority of ectopic pregnancies cause symptoms during the first month. The best aid to the diagnosis of ectopic pregnancy is a diagnostic puncture of the cul-de-sac. When old blood is obtained, the condition is usually an ectopic pregnancy. Needling of the cul-de-sac is especially useful in the differentiation of a large pelvic hematocele from a pelvic abscess. It would save embarrassment to the operator if a cul-de-sac puncture preceded laparotomy when the diagnosis of ectopic pregnancy is suspected. A patient presenting signs of acute rupture of the tube with its attendant hemorrhage and shock, should be operated upon only after the shock has been combated by the administration of fluids and blood.

Ovarian tumors, solid or cystic, may, by torsion of the pedicle, produce acute abdominal symptoms. The ovarian tumor of moderate size having a long pedicle is most likely to undergo torsion. The diagnosis usually will be made if a pelvic examination is done. It is always important to catheterize the bladder before making a diagnosis of ovarian cyst.

Dr. Roy I. Theisen, Dubuque: Dr. Seibert's review of the multiplicity of acute complications which may attack the female pelvic genitalia deserves the highest commendation. The value of conservatism in these cases where conservatism is justified, and of radical prompt surgery in those cases where it is indicated, is well brought out in his paper.

The question of ectopic pregnancy, especially in relation to the Catholic patient and operations for ectopic pregnancy in Catholic hospitals, is one in which the moral problem emphatically enters into the therapy. It is impossible during a short discussion to present this moral question in its entirety. Suffice it to say at this time that if, during the course of an abdominal operation, an unruptured ectopic pregnancy is discovered, or if by chance the diagnosis is made preoperatively, one is probably justified in removing the pregnant tube in case of urgent necessity to save the life of the mother, providing the proper operative technic is carried out. Certainly a

salpingotomy, with "shelling out" of the fetus is a direct abortion and morally wrong according to the teachings of the Catholic church. On the other hand, if the entire tube with the enclosed tubal pregnancy is removed by first attacking the blood supply of the pathologic tube by clamping the broad ligament, the attack on the fetus is indirect, and accordingly a different moral interpretation can be given.

This moral and medical question regarding ectopic pregnancies is receiving considerable studied attention both from moralists and interested gynecologists, and at some future meeting the problem can be further clarified.

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APPENDICITIS: MORTALITY AND MANAGEMENT*

ARNOLD L. JENSEN, M.D., Council Bluffs

In the short time allotted for this paper, only the more common and important phases of mortality and management can be discussed. Appendicitis causes 16,000 deaths in the United States each year. It ranks eleventh in the mortality list claiming the most healthy and able-bodied. Of these deaths 12,000 to 14,000 are preventable. They can be charged to cathartics, drug store prescribing, medical procrastination, surgical indecisions, and poorly organized surgical treatment. The great variation in preoperative, operative, and postoperative procedures and mortality rates proves that surgical management needs more standardization. It is impossible for all the conflicting opinions and methods of treatment to be correct.

The treatment of appendicitis is still top heavy with so-called dictums that have been accepted as truths without physiologic and pathologic reasoning. Methods of procedure that were advanced forty to fifty years ago are still being followed. Since that time many improvements have been added to our armamentarium of surgical technic, completely disproving such statements as "too early for late and too late for early," "interval appendectomy," "splinting of the bowel with morphine," etc. The management of appendicitis should go forward taking advantage of the many changing advances in medicine. We must remember that the procedures of today are but the history of tomorrow.

One very important general factor in raising the mortality rate is the marked change in our method of living. In the past the surviving infant represented the survivor of many attacks of gastro-enteritis and summer diarrheas. Under our present excellent sanitary system, this condition does not exist. The peritoneal cavity is not developing the immunity to infection that it did in former years.

The following general statements are fundamental requisites in the reduction of appendiceal mortality:

1. Appendicitis is always a surgical problem.
2. A McBurney incision is the one of choice.
3. The mortality rate is in direct proportion to the delay in surgical treatment.
4. The occasional operator should not attempt to perform an appendectomy.

It has always been my opinion that surgery of the abdomen requires a "working diagnosis" as well as a clinical diagnosis. In appendicitis not only must the diagnosis be made, but the proper treatment must also be decided upon at the same time. I have classified appendicitis under the following subheads from the standpoint of treatment:

1. Appendicitis associated with other pathology.
2. Low grade appendicitis.
3. Acute appendicitis.
4. Acute appendicitis with early peritonitis.
5. Appendicitis with abscess formation.
6. Ruptured appendiceal abscess.
7. Appendicitis with highly toxic pathology.

Within reason this classification will prove very satisfactory. Each group, of course, shades into the other. By adopting a definite routine and classification of treatment of these groups, the treatment of appendicitis will be placed upon a more stable ground. The mortality rate will drop. Criticism from the other branches of medicine will be

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reduced and many cases being treated by the internist will be referred to the surgeon for appendectomy.

Low Grade Appendicitis

In practice we see many cases of low grade appendicitis, and here the greatest problem is to classify these cases as appendicitis. If the diagnosis is definite, appendectomy should be performed. The history of acute fulminating appendicitis reveals that in so many cases numerous low grade attacks preceded the severe pathology. The mortality rate in the low grade group of cases is very small. Operation should be performed before they become acute emergencies. By operating upon this group of select patients, the mortality rate is around one-half to one-fourth of one per cent—certainly the lowest of all surgical procedures within the peritoneal cavity—in short, the ideal appendectomy.

Acute Appendicitis

Laparotomy should be performed immediately after the diagnosis is made. Here we are faced with a definite emergency demanding immediate surgical attention. There is no possible way to prognosticate the exact pathologic condition of the appendix except by laparotomy. The McBurney incision should be used. It reduces morbidity and postoperative abdominal distention. This incision gives a much stronger scar, and there is less danger of postoperative hernia. The hospital convalescence can be reduced to seven days with safety.

Acute Appendicitis with Early Peritonitis

These cases are acute abdominal emergencies. Appendectomy should be performed without delay. The McBurney incision should be used, anesthesia should be complete, the small bowel should never be seen in the operative wound, packs should be kept out of the abdominal cavity, there should be no unnecessary manipulation or exploration. The question of drainage is hard to discuss since each case is a pathologic complex of its own and requires keen surgical judgment. Drainage in this group should be used only when absolutely necessary. The peritoneal cavity is highly resistant to infection. After the causative agent, the appendix, has been removed, drainage is as a rule unnecessary. Too much stress cannot be placed upon gentleness in operative technic.

Appendiceal Abscess

The formation of appendiceal abscess is prima facie evidence that the peritoneum has localized the pathologic process from the rest of the peritoneal cavity. The crux of the treatment is not to disturb this localization. The cause of death is usually due to disregarding this simple principle and instituting incorrect and ambitious surgery. Given an appendiceal abscess, a definite routine of treatment somewhat as follows should be first instituted: a complete physical examination including urine and blood; Fowler's position; nothing by mouth, decompression of the bowel by negative pressure drainage of the stomach and duodenum; colon tube; enemas with or without pitressin as needed; fluids in the form of intravenous glucose; Ringer's solution under the skin; medication in the form of morphine or its derivatives for pain and sedation; room darkened; visitors excluded; and patient maintained at absolute rest. After a period of twelve to twenty-four hours the progress of the abscess can be determined. If it is on the down grade, these cases should be left alone and the abscess in due time will be absorbed. The appendix should be removed at a later date. If the systemic symptoms increase in severity, or do not subside, or if the abscess increases in size, drainage should be accomplished. The incision should be made over the abscess which may be located anywhere from the midline in the pelvis to the right lumbar or gallbladder regions.

The opening of the abscess must be strictly extraperitoneal. The peritoneal cavity must not be reinfected. If the abscess cannot be opened extraperitoneally, a two-stage operation should be performed in which the abscess is extraperitonealized first by packing and then opened at a later date. An occasional abscess can be opened through the cul-de-sac or rectum. At times it is advisable to open the abdomen through a distant incision, explore and then drain the abscess extraperitoneally through another incision. The removal of the appendix is a debatable question. The ability of the surgeon undoubtedly plays a major part in this controversy; consequently, this point will always be one of debate. In any event, the peritoneal cavity must not be reinfected.

Ruptured Appendiceal Abscess

Ruptured appendiceal abscess is a dire emergency and demands immediate laparotomy with drainage. The symptomatology is very much like that of ruptured ulcer and may be easily confused with it. Since the peritoneal cavity is all ready contaminated the appendix should be removed.

Appendicitis with Highly Toxic Peritonitis

The mortality rate in this group is high and accounts for the majority of the appendiceal deaths. Here there is marked disagreement as to management and treatment. The pathology now ceases to be appendicitis; it has gone beyond it, and the peritoneal cavity as well. It is now a sys-

temic disease, a toxemia, affecting all the vital organs as well as those within the peritoneal cavity. The central nervous system, heart muscle, lung tissue, liver, pancreas, stomach, and small bowel actions and secretions are disturbed. The white cell forming organs are overstimulated. Kidney tissue is taxed to eliminate toxic substances. The fluid and chemical balances of the organism are disturbed. Such is the condition referred to as generalized peritonitis, better called highly toxic peritonitis.

The pathology of highly toxic peritonitis must be definitely understood in its entirety if intelligent treatment is to follow. In the light of our present knowledge, there are three definite pathologic changes within the peritoneal cavity.

1. There is pus and inflammatory exudate within a cavity containing many ramifications and pockets. The absorption of this fluid is highly toxic. Absorption is greater in the upper and less in the lower portions of the peritoneal cavity.
2. There is interference with the motility and tonicity of the intestinal tube. The resulting reverse peristalsis and paralysis cause absorption of toxic material from within the intestinal wall and mucosa.
3. Vomiting, reverse peristalsis, and paralysis cause depletion of body fluids and chlorides.

Death is due to toxic absorption from the peritoneal cavity and the mucosa of the intestinal tract, plus the loss of body fluids and chlorides. Our treatment then must be directed toward the correction of these pathologic processes.

These patients are usually seen first in the hospital. They have just been transported from their home and are usually in pain, mentally excited, and uncooperative. Transportation has increased their toxemia. The pathology is further clouded by morphine. A rapid and fairly complete examination should be made including the throat, heart, lungs, abdomen, rectum, urine, and blood analysis. As in any other desperate surgical condition, a reasonable amount of time should be devoted to preoperative preparation, but this period should not exceed twelve to eighteen hours. The preoperative treatment follows the same established routine as that described in appendiceal abscess. During this time the fluid balance can be corrected, blood chlorides replaced, distention can be lessened, the pulse and temperature will drop, and the general condition of the patient becomes less toxic. In short, we have attacked by conservative means two of the pathologic changes; namely, toxemia from within the intestinal tract, and loss of fluids and body chlorides.

The next problem is the removal of pus and exudate from the peritoneal cavity. Complete drainage is impossible, but surprising amounts may be evacuated if drainage is performed correctly. This operative procedure can be carried out without causing any serious damage to the patient. It should be done through a McBurney incision, under general anesthesia with good relaxation of the abdominal wall, with a minimum amount of trauma. Suction and gauze sponging should not be used. Separation of adherent areas and production of hemorrhage are indicative of too rough manipulation. Drainage should be extensive, soft rubber tubing and cigarette drains should be placed in the cul-de-sac, and cigarette drains should be placed along the lateral side of the cecum. The appendix should be removed if it is readily accessible. In removing the appendix, the source of further peritoneal contamination is eliminated. The surgeon with gentleness and finesse in his finger tips can perform an appendectomy without seriously injuring the protective mechanism of the peritoneum; the rough operator will cause serious damage. In draining the peritoneal cavity and removing the appendix, we decrease the amount of toxic absorption and assist in localizing the peritonitis.

Toxic absorption from the intestinal mucosa must now be further reduced, and ultimately eliminated. Death rarely occurs unless there is persistent distention. Every method at our disposal should be used. It should be treated even at the danger of increasing other pathologic conditions; starting with negative pressure suction within the stomach, duodenum, and colon; enemas with pitressin; prostigmin; spinal anesthesia; and finally jejunostomy. In the past it has been an established principle to reduce peristaltic activity to a minimum in peritonitis. It is this very condition that causes distention. Peristaltic activity must be maintained, but not overstimulated. Small and repeated doses of morphine stimulate the peristaltic activity of the small bowel. Enemas and pitressin will correct the retarding effect in the large bowel.

Jejunostomy is indicated in persistent distention after other methods have failed. It should be done under local anesthesia, through a small upper left rectus incision, and never at the time of peritoneal drainage. The first loop of bowel presenting itself should be used. If this is done there will be no angulation and the tube will drain. It is of definite value in removing toxic material from the upper small bowel which in my opinion is rarely ever paralyzed, but is usually in a state of reverse peristalsis.

Correction and maintenance of body chlorides and fluids are relatively simple. Repeated urine analyses indicate dehydration and acidosis by the presence of acetone and diacetic acid. Repeated blood chloride determinations indicate the blood chloride value. Approximately 3,000 cubic centimeters of fluids every twenty-four hours, 1,000 of five per cent glucose and 2,000 of normal salt solution, will correct and maintain body chlorides and fluids. Further postoperative treatment should follow along the lines of the preoperative preparation. Nothing should be given by mouth until peristaltic activity is established and the temperature returns to normal. The giving of fluids by mouth, with Wangensteen drainage in the stomach, serves only to increase the chloride depletion.

If the postoperative convalescence becomes prolonged, we are soon faced with the problem of marked debilitation and loss of weight. An internist should see these cases in consultation. Every attempt should be made to correct and improve the general systemic condition. Blood transfusions, glucose and insulin, five per cent alcohol in normal saline solution intravenously, hypodermic liver extract, and vitamins in concentrated form are indicated and will greatly improve cases of long convalescence.

The treatment of highly toxic peritonitis primarily involves about three principles; namely, drainage of the peritoneal cavity, drainage of the intestinal tube, and the maintenance of body fluids and chlorides.

COMPLICATIONS

Complications following appendectomy and peritonitis are many, and raise the mortality rate. Time does not permit a discussion, but complications of importance are associated with fever, increased pulse rate, or vomiting. These symptoms are easily recognized and should lead the surgeon to suspect the presence of complicating pathology.

We must also remember that many so-called complications are not such, but rather the original pathology. As a result the vermiform process has been charged with a mortality rate that belongs to the genito-urinary or respiratory system.

SUMMARY

The various phases of treatment in brief are as follows:

1. Operate at once, low grade appendicitis, acute appendicitis and appendicitis with early peritonitis, always removing the appendix.
2. Use a modern Oschner's treatment on all subsiding appendiceal abscesses.
3. Drain extraperitoneally appendiceal abscesses that will not subside.
4. Prepare highly toxic peritonitis cases before draining and remove the appendix if possible.
5. Treat distention actively by all methods at our command.
6. Carefully and repeatedly check body chlorides and fluids.

CONCLUSION

Appendicitis is a surgical disease. Its treatment belongs completely in the field of surgery. The mortality rate can be reduced by a more definitely organized system of treatment.

Discussion

Dr. Donovan F. Ward, Dubuque: Dr. Jensen is to be congratulated upon his paper because of the terse nature of his presentation. Although I do not agree with him on some points, the diagnosis, management, and treatment of appendicitis will continue to be a bugbear to the medical profession. When and when not to interfere is and will be a matter of personal surgical judgment, as Dr. Jensen has pointed out. Appendicitis is truly a surgical disease and should be so treated and emphasized to our medical confreres. Procrastination by the patient is usually the ally of appendiceal complications.

I want to insert into this discussion the results of a certain technic which I follow. In a recent review of my series of appendectomies, including low grade, chronic, and acute cases with and without complications, I have found that the necessary variations in technic have proved beneficial. We were taught that, given a case of perforated appendix, with spreading peritonitis, it was better judgment to establish drainage and close with the least possible disturbance. Some surgeons believe that the offending appendix should be removed, plus drainage. Given a case where free pus is spreading, removal of the source would make little difference insofar as spreading the infection is concerned. In most adult cases, I have made it a rule to make my incision over the point of maximum tenderness elicited preoperatively. In children I prefer a gridiron incision, making it lateral to McBurney's point, removing the appendix posterior to the cecum, and culturing the pus for organisms, which often influences later postoperative management. Then a small rubber catheter is inserted through the cecum into the ileum for decompression and nourishment, if necessary. A Penrose drain is employed for cul-de-sac drainage.

I routinely instill one of the proprietary lysates, flooding the right iliac fossa. Postoperatively I use a five per cent glucose in Hartmann's or normal saline solution subcutaneously or intravenously, depending upon the condition of the patient leaving the operating room. If ileus develops, Wangensteen suction method is used promptly. Removal of the cecostomy tube in three to five days is the common procedure. With this type of management, the morbidity has been reduced, the comfort of the patient greatly increased, and the mortality rate lessened. The average length of time in the hospital for peritoneal

drainage only was sixteen days; for the above outlined treated cases, ten and one-half days.

When spreading peritonitis causes 83 per cent of the deaths of patients operated upon for appendicitis, we know that intelligent treatment has been too long delayed. Taking the series of cases studied, I find that there were eight deaths out of thirty-four cases having peritoneal drainage only; three deaths out of twenty-eight having cecostomy, and, of twenty-four cases who had cecostomy with lysate, there was no mortality.

I am convinced that peritoneal drainage plus cecostomy plus the use of a lysate will decrease the mortality rate in complicated appendicitis.

Dr. Henry J. Heusinkveld, Clinton: I am sure we can subscribe in a general way to the principles which Dr. Jensen has so efficiently presented to us in his paper.

I think the consideration of the subject of appendicitis mortality rates properly includes such matters as educational programs for the laity, acquainting them with the common symptoms of the disease and the danger of the use of cathartics. It is assumed that our concern today is with the treatment of acute appendicitis, with a view toward reduction of the morality rate. There is wide variation in statistics on mortality rates from acute appendicitis, with the higher rates generally coming from large centers of population. These rates will vary from two or two and one-half per cent up to 20 or 25 per cent.

In the treatment of acute appendicitis and its complications, I desire to mention certain principles, some of which have already been emphasized, which have aided me materially in attaining a relatively low mortality rate.

1. An attempt should be made to determine the location of the appendix and to estimate the extent of the infection, if possible, so as better to plan the mode of attack. It is obvious that a retrocecal appendix, especially if it is lying high, is a totally different proposition than a pelvic appendix lying low. The mode of attack must vary considerably.

2. No packs are used in the abdomen unless there is danger of soiling the peritoneal cavity.

3. The importance of extreme gentleness of manipulation is emphasized again, together with avoidance of undue traction on the bowel or mesentery.

4. Only cases with perforation, gangrene, abscess formation or diffuse peritonitis are drained. A moderate, localized peritonitis practically never requires a drain. Drains are of soft rubber tubing, extending to the cul-de-sac or placed pericecally, and are removed usually in three to five days. I am convinced that drains which are left too long invite the formation of troublesome adhesions.

5. Appendiceal abscesses are drained promptly, avoiding the peritoneal cavity. The appendix is generally removable with care, but if there is danger of peritoneal contamination, it is left for subsequent removal.

6. Wangensteen decompression and parenteral fluids, transfusions, both prior to and following operation, are invaluable in diffuse peritonitis. Moderate peristalsis of both small and large bowel is encouraged to relieve abdominal distention.

7. Bacteriologic examination of specimens removed should be made in order to detect the occasional case of gas bacillus infection and start appropriate treatment at once.

Although the McBurney incision is generally favored, it is not used arbitrarily; rather, an incision is made which will most adequately meet the needs of the situation at hand. It is obvious that removal of chronic and subacute appendices, which carries an almost negligible mortality rate, is a potent factor in reducing the appendiceal mortality rate. By adding to this, early diagnosis and prompt operation in acute cases, our hope for lowered mortality rates will be attained.

A STUDY OF THE GORDON TEST FOR HODGKIN'S DISEASE*†

LESTER HAROLD HOYT, Iowa City

About one hundred years ago, Hodgkin[1] first described a group of cases which had in common enlarged lymph nodes, cachexia, fever, and a fatal termination. By the middle of the last century the clinical entity known as Hodgkin's disease in this country and lymphadenoma in Europe became well established. However, accurate diagnosis was practically impossible until about 1900, when Sternberg[2] and Dorothy Reed[3] described the pathology in detail. Even at present there is a certain group of cases which cannot be diagnosed with certainty from the biopsy, particularly early in the course of the disease.

The etiology of the disease remains obscure in spite of the intensive work by many men since the beginning of the century. Recently Gordon[4] suggested that a filterable virus might be the cause of the disease. He incubated a broth suspension of a Hodgkin's lymph node and injected it intracerebrally into rabbits. Almost invariably the rabbits developed a typical syndrome of weight loss, ataxia, and paralysis. His work with this test failed to demonstrate a causative agent of the disease. However, others have suggested that the Gordon test be used as a diagnostic procedure in Hodgkin's disease[5]. The purpose of this investigation was first to determine the reliability and value of the Gordon test in the diagnosis of Hodgkin's disease; and second, to study certain factors which might influence the test.

Methods. When the lymph nodes came from the operating room they were kept sterile, and

* This is the thesis which was given the Baldridge-Beye Memorial Award in May, 1937. Late publication is due to the fact that the manuscript was inadvertently misfiled.

† This work was done in the Department of Pathology, State University of Iowa, Iowa City, Iowa.

pieces for microscopic study were taken with aseptic precautions. In some cases the nodes were frozen to preserve them until time was available for suspending them in meat extract broth. No buffer was used. The suspension was kept at zero to five degrees, centigrade. Cultures were made in every instance. In a few cases where bacteria were found the suspension was heated to 65 degrees centigrade for twenty-five to thirty minutes. Cultures made after heating were negative. After an incubation period of ten days or more rabbits were injected intracerebrally by the Gordon technic[4]. After inoculation an occasional rabbit showed fleeting paralysis or convulsions. If these findings were still present at the end of twelve to twenty-four hours, the rabbits were discarded.

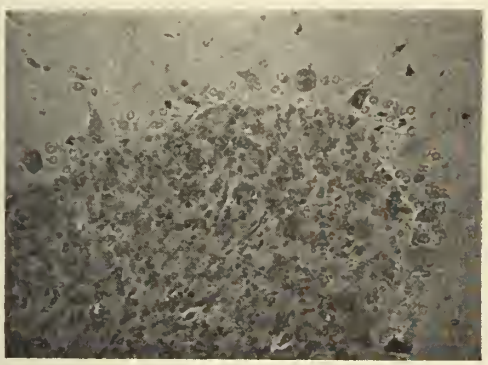


Fig 1. Cerebellum of a normal rabbit.

The reactions observed fall readily into two groups, severe and mild. The severe ones were usually fatal, while those with mild reactions recovered. In either case, the onset of symptoms was usually on the third or fourth day. All started with scoliosis, spasticity, and loss of weight. Ataxia was usually present, and was observed by placing the rabbit suddenly on its side and noting the amount of effort necessary for it to regain the normal position. The normal and negative rabbits did this in one attempt, while positive rabbits often required forty to fifty attempts. Those affected mildly lost their symptoms in two to three days and gained weight again. There was no remission of symptoms in the severe cases. The paralysis and weight loss were progressive. The majority were fatal within two weeks or were killed when it was seen that recovery was unlikely. No case was considered positive unless loss of weight, scoliosis, and spasticity were all present.

The Gordon test as a diagnostic procedure. Nineteen cases of Hodgkin's disease, proved by pathologic examination of lymph node biopsies, were admitted to the University Hospital from September, 1935, to March, 1937. Of these biopsies, nine were sufficiently large to permit a Gordon test to be done. Several rabbits were used when the node was large enough. Each of these cases showed a positive Gordon test. No correlation was found between the severity of the Gordon test and the location of the lymphadenopathy, the duration of the disease, the previous treatment of the patient, or the histology of the node. Recently a summary of the literature on the Gordon test was made by Rosenberg and Bloch[6]. They have collected seventy-seven cases of Hodgkin's disease in which the Gordon test was performed. Sixty cases (78 per cent) gave positive tests, seventeen (22 per cent) gave negative ones. Of the one hundred one control cases, three were positive and ninety-eight negative (97 per cent). These controls included almost every imaginable lymphadenopathy, both inflammatory and neoplastic, as well as several chemical irritants. With the exception of the cases reported by one investigator,[7] these controls were uniformly negative. In addition to the nine proved cases of Hodgkin's disease, the Gordon test was done on four cases in which a definite histologic diagnosis could not be made.

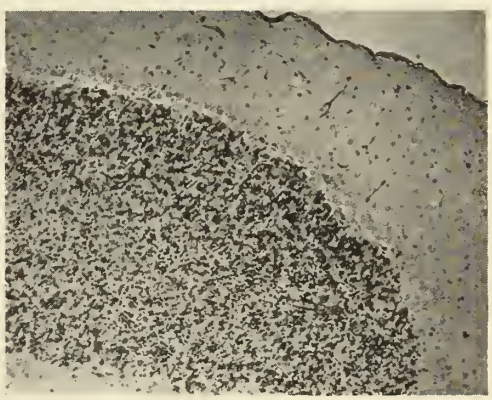


Fig. 2. Cerebellum of a rabbit which died from the severe type of the Gordon test.

Case 1. A white male, thirty-one years of age, was first admitted to the University Hospital in February, 1936. Complaints were loss of weight and strength, fever, and enlarged nodes. The tentative clinical diagnosis was malignant lymphoma. A biopsy was reported as chronic axillary lymphadenitis. A statement was made in the pathologic report that early Hodgkin's disease could not be ruled out. The Gordon test was positive. A clinical diagnosis of Hodgkin's dis-

ease was made when the patient returned to the hospital in September, 1936. He refused another biopsy. Six hundred roentgens of x-ray therapy were administered at that time. His course since September is consistent with the clinical diagnosis of Hodgkin's disease.

Case 2. A white male, forty-six years of age, was first admitted to the University Hospital in December, 1935. He complained of loss of weight and strength and palpable lymph nodes. A clinical diagnosis of Hodgkin's disease was made. Biopsy of a cervical lymph node at that time was reported as marked hyperplasia, probably early

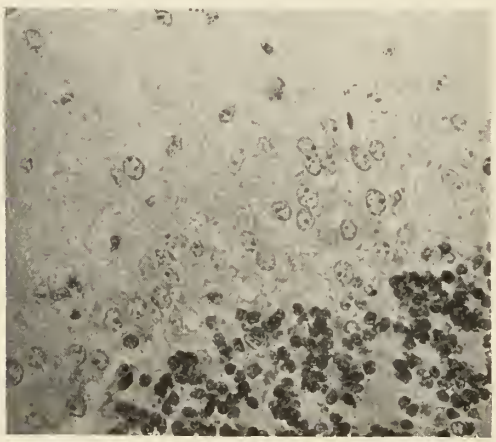


Fig. 3. Same as Fig. 2 under higher power.

lymphoma. A Gordon test was positive. The disease has not progressed, but when seen in the outclinic in March, 1937, he still had lymph nodes typical of Hodgkin's disease in his axillae and groins.

Case 3. A white male, twenty-seven years of age, was first seen in the University Hospital in December, 1935. He complained of enlarged nodes, fever, loss of weight and strength. A clinical diagnosis could not be made. A biopsy of an axillary lymph node was reported as chronic hyperplastic lymphadenitis, with the statement that early Hodgkin's disease could not be ruled out. A Gordon test was positive. Unfortunately he died in February, 1936, without a definite diagnosis. Relatives would not permit a postmortem examination.

Case 4. A white male, twenty-one years of age, was first admitted to the University Hospital in March, 1936. He complained of painful glands, headache, and soreness in his arms. He had no fever. The biopsy of an axillary lymph node was inconclusive, but a probable diagnosis of malignant lymphoma (Hodgkin's type) was made. A Gordon test was negative. A letter from him in March, 1937, states that he is now in California enjoying good health. He has been working, has a good appetite, and has gained weight and strength. He reports that he has no enlarged glands at this time.

This group of four cases suggests that the Gordon test is of value in the diagnosis of Hodgkin's disease where the pathologic picture is not well developed. Whether or not such a conclusion is justified must be decided by further observation of these patients and the study of additional cases of this type.

Analysis of some factors relating to the Gordon Test. After biopsy, some of the nodes were frozen and others were suspended immediately. No difference could be detected in the results. One node remained frozen for forty-four days and was as strongly positive as some which were suspended immediately or frozen only a few days.

The treatment of the suspensions could also be varied widely. The incubation period varied from ten to eighty-seven days. In the one incubated for eighty-seven days the rabbit developed typical symptoms and died within a week. Some of the cases incubated for only ten days were also of this severe type. However, others incubated for similar periods of time showed the mild type of reaction. No correlation could be drawn between the duration of the incubation and the severity of the syndrome.

It was found that the suspension could be heated to 65 degrees centigrade for thirty minutes without interfering with the test. This is in



Fig. 4. Cerebellum of a rabbit which recovered from the mild type of the Gordon test.

accord with Gordon's findings[4]. None of our heated suspensions caused a fatal Gordon test, but they were all definitely positive.

Addition of rabbit brain to the lymph node suspension before injection was found to interfere

with the test as compared to the control which was positive. Both normal rabbit brain and brain from a rabbit which had recovered from a recent positive Gordon test were used. Negative results were obtained in each instance. According to Van Rooyen[5] this is due to the absorption of the specific agent by the suspended brain.

A study was made of the effect of incubating the lymph node suspensions with human sera. Both normal serum and one from a patient with Hodgkin's disease were used. With each serum incubation times of one hour and of eight days were used. The rabbits receiving the serum-lymph node suspensions all died, while the control suspension from the same node produced only a mild attack. A control of normal human serum in broth was negative. Apparently the intensifying effect of human serum is not dependent upon its source nor upon the length of the incubation time. The cause of this phenomenon remains obscure. Experiments with rabbit sera have not been completed.

Three attempts to transmit the Gordon syndrome from one rabbit to another by injection of a suspension of the brain of rabbits in various stages of the disease were all negative. This is consistent with all the reports published to date.

Pathologic observations: Postmorten examinations were made on the majority of our rabbits. Cultures of the brain and blood were negative. Sections of the cerebrum of the positive Gordon rabbits showed in some cases a patchy perivascular lymphocytic infiltration and a mild meningeal reaction. However, these findings were frequently present in normal brains sectioned for controls. Gordon made this same observation[4]. Sections of the cerebellum show an almost complete loss of the Purkinje cells and a marked glial reaction in the region of the Purkinje layer. (See Figs. 1 to 4.) Recovered rabbits show an essentially normal histology. This would indicate that in the mild type of reaction, necrosis of the Purkinje cells does not occur. Detailed studies on the histopathology have not been completed because of the necessity for special stains.

DISCUSSION

In 1933 Friedemann[8] discovered that the injection of normal bone marrow into rabbits intracerebrally or subthecally resulted in a picture similar clinically to that produced by Hodgkin's disease. It seems that there must be some connection between these discoveries, in spite of the fact that there are certain differences in their properties. For example, the agent in bone marrow is soon destroyed by cold temperatures or by freezing, and is proteolytic. The microscopic picture shown in Figs. 2 and 3 from the brain of a positive Gordon rabbit is similar to that described by Kelser and King[9] for the brains of guinea pigs which have been injected with bone marrow. This histologic picture was first described by Scherer in 1931.[10] He reported that it was present in a large number of human cases dying from various acute infectious diseases and such chronic conditions as heart failure, uremia, and brain tumors. He felt that it was nonspecific in nature and could not be correlated with the clinical symptoms; neither could he account for these changes.

SUMMARY

The Gordon test was positive in all the cases of Hodgkin's disease in this series. The test appeared to be helpful in the diagnosis of a group of cases suspected clinically of being Hodgkin's disease, but in which the biopsy was inconclusive. A number of variations were made in the treatment of the Hodgkin's glands and their suspensions before inoculation. Most interesting was the finding that addition of human serum intensified the reaction. A cerebellar lesion characterized by destruction of Purkinje cells and a glial proliferation was present in rabbits dying with a positive Gordon test. The cerebellum appeared to be essentially normal in those rabbits which recovered.

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NONSPECIFIC FOREIGN PROTEIN IN OCULAR THERAPEUTICS*

SYDNER D. MAIDEN, M.D., Council Bluffs

The parenteral use of nonspecific foreign protein in the treatment of ocular inflammations is an established procedure. This form of therapy is generally recognized as one of the greatest advances made in ocular therapeutics in the past quarter of a century. To the physician in private practice, it offers a method of treatment for a large group of his patients, and assures him of uniformly good results in most cases. In many instances, these results border on the miraculous. Before this form of therapy was instituted, this type of case was very often the source of anxiety and despair to both the physician and the patient, with the consequent loss of far too many eyes.

The mode of action in this form of therapy is not understood. This statement can be made with assurance, regardless of the fact that a great amount of study and research has been done by numerous individuals. The consensus of opinion attributes the therapeutic results to the reaction of the system to the injected protein, whereby the "general body resistance" is built up. This is a simple statement, but it embraces all the complicated reactions of the system to the protein molecule. These include shock, increase in body temperature, leukocytosis, increase in the complement and antibody content of the blood, changes in the hydrogen ion content of the blood, the liberation of numerous enzymes, the increase in the permeability of the capillaries, the increase in the activity of the reticulo-endothelial system and changes in the autonomic nervous system, secretory glands and lymphatic system.

The interpretation of these various reactions gives rise to two theories of action of nonspecific foreign proteins used parenterally. These reactions fall grossly into two classes. The first class includes the general reactions of shock, increased body temperature, leukocytosis, and an occasional increase in the normal serum content. The second class concerns the production of specific antibodies following protein injection with the concomitant stimulation of nonspecific antibodies.† The adherents to the first view claim the therapeutic results obtained are due to the shock, the increase in the body temperature which may be well above the limit for various organisms, and the leukocytosis which accompanies the reaction, thereby aiding the general body defense. The other group of observers claim the results obtained are due to the specific and nonspecific antibodies that are produced in the blood following protein injection.

The works of Brown of Cincinnati should be given consideration in connection with the latter theory. He advances the idea that perhaps the therapeutic results are obtained by the presence of antibodies in the blood stream and intra-ocular fluids, which not only have specific properties for the antigen injected, but nonspecific properties as well. Brown proposes that the shock, the increase in temperature, and the leukocytosis are not the therapeutic agents but merely manifestations of the presence of these new antibodies in the blood stream, being formed by the protein cleavage which takes place in the body cells following the injection of foreign protein. Thus he suggests that the presence of the antibodies is the main factor for the therapeutic results, and the shock, increase in temperature and leukocytosis are evidences of their formation and have little or nothing to do with the end results. Brown's theory is based primarily upon the allergic concept of ocular inflammations. Antigens are formed at the site of infection which sensitize the ocular tissues to a point of intoxication, whence they become activated and produce an inflammation. The nonspecific antibodies produced by the injection of various proteins act as "interferers" to the activating antigen, and inhibit the process of inflammation in the sensitized ocular tissues.

Working on this hypothesis, Brown has attempted to bring about a high concentration of antibodies in the aqueous humor without producing shock and a lesser degree of temperature. He has been able to accomplish this by using the typhoid "H" antigen, a component of typhoid vaccine. This antigen is capable of producing antibodies in large amounts which are heat labile at 100 degrees centigrade, and will remain in the blood stream for several weeks. By repeated injections of the typhoid "H" antigen, the blood titer for the antibodies can be raised to a high degree (1-600 or 1000) and maintained. By doing a paracentesis of the cornea, or aspirating the anterior chamber at intervals, the aqueous titer is elevated from one to two, (which is the usual concentration found) to as much as one to fifty. Brown has found that an aqueous titer of one to eighteen completely inhibits the combining powers of the activating antigens with the sensitized ocular tissues. He attempts to increase the concentration of antibodies in the aqueous humor as quickly as possible. The average effective dose of the typhoid "H" antigen is about twenty-five million, repeated every thirty-six to forty-eight hours. If the inflammation is severe and demands

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†Brown, A. L.: Experimental uveitis; "interference" effect of parenteral administration of proteins on sensitization of uveal tract. Tran. Am. Ophth. Soc., xxxiii:435-450, 1935.

more immediate concentration, the dose can be repeated in twenty-four hours. Twenty-four hours after the second injection, a paracentesis of the cornea is done. The aqueous titer immediately increases from one to two to one to eight or one to twelve. By repeated paracenteses, the aqueous concentration is increased to the desired limit. The results of Brown's experiments are extremely interesting and will command serious consideration. The last chapter has not been written on the mode of action of this form of therapy. None of the theories so far advanced is capable of explaining all the clinical observations following this form of therapy.

There are numerous proteins which may be used parenterally, but the most common ones are milk, antidiphtheritic serum and typhoid vaccine. These are all inexpensive and easily obtained. Whole milk which has been brought to the boiling point for three minutes is injected intramuscularly, generally in the buttocks. For infants, three cubic centimeters are the usual dose; for adults, ten cubic centimeters; children's doses are proportioned according to their ages. The essayist used this treatment for a number of years, but has seldom employed it, except in children, during the past seven or eight years. Typhoid vaccine is preferred because one can control the degree of reaction more effectively, and the reactions are more uniform; they can be repeated more satisfactorily by increasing the dosage. All individuals do not react the same to milk; one adult may not react to ten cubic centimeters and another may have a severe shock followed by a temperature of 104 to 105 degrees. There is also considerable local discomfort following the injection of milk.

The initial dose of typhoid vaccine is usually 35 million germs for males and 25 million germs for females of dead organisms injected intravenously. In large individuals, or where time is a factor, this may be increased to 50 million germs. Within four to eight hours, one may expect a chill followed by a rise in temperature to 101 to 104 degrees. The dose is increased by 25 million germs and repeated after the temperature has been normal for twelve hours. Each succeeding dose is increased sufficiently to obtain the desired reaction. If therapeutic results are not manifest after five or six injections, one is not justified in continuing this therapy.

The numerous commercial preparations have proved uniformly disappointing in my experience. In mild cases of iritis, and in corneal abrasions, that fail to epithelize within forty-eight hours, edwenil has been of some benefit. This preparation is expensive and not efficacious enough to rely upon.

The indications for the use of foreign protein are many. In general, the best results are obtained in acute inflammations of the conjunctiva, cornea, and uveal tract. However, in chronic and recurrent inflammations, this form of therapy affords us far better means of management than was possible before its advent.

Acute infections of the conjunctiva respond immediately to foreign protein therapy. This is especially evident in gonorrheal ophthalmia. After the use of either milk or typhoid vaccine, the pus usually disappears within thirty-six to forty-eight hours, the swelling subsides and the patient may be discharged, as cured, within a week or ten days. When one reflects upon the clinical course of such cases, before the advent of this form of therapy, the present results appear little short of miraculous. It is claimed by some that milk is the protein of choice for this type of infection. In children, I have never used anything else; but in adults, my results have been just as satisfactory when I used typhoid vaccine. Now with the addition of sulfanilamide to our armamentarium, it appears that we have a choice of treatment in gonorrheal infections.

Foreign protein therapy is of immense value in corneal inflammations, particularly in ulcers. The earlier the treatment is instituted, the quicker and better are the results. Simple abrasions of the cornea, which are not covered with epithelium within forty-eight hours, should receive an injection of foreign protein at once. Injuries to the cornea by finger nails, cat claws, etc., should be given the treatment immediately. If the organism is virulent, and the ulcer is progressing after the second injection of the protein, a paracentesis of the cornea should be done. This procedure should be repeated, as indicated, because it not only produces a hypotonus which relieves pain and permits better nutrition for the ocular tissues, but Brown has shown that the antibodies in the newly formed aqueous humor are greatly increased, thoroughly inhibiting the inflammatory process. It is astounding how rapidly many of these early infections heal. A patient complaining of pain, lacrimation, photophobia and blepharospasm will often obtain relief from all these symptoms within a few hours. I have had patients tell me that their symptoms were much relieved within an hour following the protein injection, before the chill or any of the usual clinical reactions were manifest.

The benefit of this treatment in uveal infections is generally recognized. Here also it is important to institute the therapy early. Tissues which are overwhelmed by the toxins of inflammation do not respond to protein injections as normal or

more virile structures do. The results obtained in these cases, especially in uveitis, are sometimes spectacular; the pain subsides, the congestion begins to disappear, and the anterior chamber starts to clear following the first injection. In recurrent uveitis, the individual attacks are satisfactorily managed, and subsequent attacks are fewer and respond more quickly to treatment. Paracentesis of the cornea should be done in persistent uveal inflammations to insure quicker and more satisfactory results.

Foreign protein therapy should be used axiomatically in all penetrating wounds of the eye, and in all postoperative infections. It has been my practice for some time to employ its use as a prophylactic for possible infection, following all intra-ocular operations. Many surgeons now are administering it for the same purpose two to three days previous to intra-ocular operations. This procedure is still more rational. In optic neuritis, it helps to cut short the process, even in cases of unknown etiology. Preferably, the patients receiving this treatment should be hospitalized; but in these days of economic stress, it has become an office procedure. The individual is instructed to go home at once and go to bed; to expect a chill within four to eight hours following the injection; to remain in bed until the temperature following the chill subsides; to keep a record of his temperature, at fifteen minute intervals until the peak has been reached, and then at two hour intervals. Such records should be brought with him when he reports.

In all ocular inflammations, the fundamental treatments such as the use of atropin, salicylates, heat and cold, etc., should be instituted; the foreign protein therapy should be used as an adjunct. Tuberculosis and syphilis must be ruled out, as far as possible, although good results are obtained in interstitial keratitis of specific origin. The general condition of the patient must be considered before the use of foreign protein therapy. Old age, general debility, advanced vascular sclerosis, gross heart or kidney pathology are contraindications for its use.

Favorable results are obtained in many inflammatory conditions of the eye by the use of the hypertherm. There are several reasons why foreign protein therapy is preferable. With the hypertherm therapy, heat is the only therapeutic element involved. There is considerable mortality accompanying its use, the treatments are too expensive for the average patient and a good machine with a properly trained personnel is not available to many practitioners. With foreign protein therapy we not only have heat as a therapeutic agent but also, more or less physical shock, the formation of antibodies and numerous other body reactions to the injected protein. Foreign protein therapy involves very little risk, is inexpensive and can be obtained at any time or place.

In conclusion, it is my personal belief, that foreign protein, properly administered, affords the private practitioner one of the most valuable therapeutic agents he has for the treatment of ocular inflammations. By its use, the grief and the unfortunate end results which attended many of these cases, previous to the advent of this form of therapy, have been eliminated to a great extent.

HERPES SIMPLEX OF THE CORNEA*

C. A. Noe', M.D., Cedar Rapids

When we consider the importance of the cornea in vision, and the disturbance of vision which only a small corneal scar may cause, it appears permissible to discuss a very common corneal lesion, namely, herpetic keratitis. Herpes zoster of the cornea fortunately does not occur nearly as frequently as herpes simplex, although the etiologic agents of the two conditions are apparently closely related. I have been especially interested in herpetic keratitis since nineteen cases have come under our observation during the past nine months. All of these have been of the simplex variety.

Many simple herpetic corneal lesions appear as a complication of a general infection, perhaps due to a lowering of body resistance. Thus the name "cold sore" or "fever blister" has become associated with herpetic lesions on the lips and nose. In the same way corneal herpes often appears as a coincident lesion with a "head cold." Gunderson[1] reported this occurrence in 62.1 per cent of his 225 cases. Occasionally corneal herpes is found in association with lip, nose or eyelid lesions. Trauma may play a part in the etiology by producing a site favorable to growth of the etiologic agent. This agent has been rather definitely established to be a filterable virus by various workers, first among whom was Grüter. They have demonstrated that infected material from the herpetic lesions may be transplanted to the cornea of rabbits, where it produces a herpetic keratitis, which may lead to an encephalitis. Intranuclear virus inclusions have been found in eyes affected by herpes and enucleated for other reasons. In man the disease is usually limited to one eye, and there is a very marked tendency toward recurrence in the same eye. Gunderson found only one bilateral case in 225.

The onset is usually acute with pain, lacrimation, and photophobia, so that many patients believe

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they are suffering from an ocular foreign body. There is usually considerable pericorneal congestion, although this may be almost absent. The usual appearance of the cornea is that of a dendritic keratitis. This name comes presumably from the similarity to the dendrites of a nerve cell. The ulcer is formed by a confluence of many minute herpetic lesions making an irregular zig-zag figure with many branches. The central areas stain a bright green with fluorescein, while the borders of the lesion present an elevated greyish appearance and stain a dull green. The lesions may be in any portion of the cornea. Many cases do not present this typical picture, but rather show numerous smaller punctate lesions. It is difficult to distinguish these from a superficial punctate keratitis. Others present a lattice-like arrangement of fissures. All of the cases observed by us had the dendritic type of ulcer, sometimes very small and often multiple.

Iris irritation and photophobia are nearly always present. In our cases only one presented the picture of an acute iritis, beginning as such and showing corneal lesions only about a week after the onset. In thirteen the pupils were dilated with scopolamine, and in six this was thought unnecessary. Duke Elder in his textbook speaks of a hemorrhagic iritis sometimes being present.

One of our cases showed the typical ulcer described as keratitis metaherpetica. This was a small, round, shallow, torpid ulcer accompanied by only very slight discomfort, probably due to the rather marked corneal anesthesia which seems to accompany this stage of the disease. This form of ulcer follows a dendritic keratitis from which it differs mainly in the appearance of the ulcer and by the presence of marked anesthesia. Conjunctival and pericorneal congestion was typically very slight. Gunderson was unable to demonstrate the presence of the herpes virus in any of his cases in this stage of the disease.

Tissue sections of the area of keratitis are described as showing the epithelium to be primarily affected. It becomes swollen, then vacuolized, and finally necrotic. Intranuclear virus inclusions have been found. There is some proliferation of the epithelium at the borders of the ulcer, where it is only loosely attached to Bowman's membrane. This latter structure may become necrotic, and the inflammation may extend to the anterior corneal stroma, in which event permanent scarring occurs.

The diagnosis of the typical case is not difficult because of the characteristic appearance of the cornea which has been described. A very important point is a careful examination of the cornea, after staining with fluorescein, with a slit lamp corneal microscope, or at least a hand slit lamp and a loupe, since small lesions are easily overlooked. In the differential diagnosis the following conditions must be considered:

1. Corneal abrasions or foreign bodies.

2. Superficial punctate keratitis of Fuchs. Herpetic cases which present multiple small lesions may be almost indistinguishable from this condition, which indeed may be a closely related one etiologically. The course of the herpetic type is usually shorter and more acute.

3. Multiple epithelial erosions. These may occur with a severe conjunctivitis, especially of the staphylococcal type. They also occur after irritation by chemicals or dust.

4. Recurrent corneal erosions. In this condition there is usually a history of trauma followed by healing. Symptoms recur several weeks later, especially on opening the eyelids. Some authors consider this insecure healing also due to a virus infection.

5. Superficial linear keratitis. This is always associated with low intra-ocular pressure.

All of the cases observed in our series were treated by thorough cauterization with strong tincture of iodine as advised by Gunderson. The eyes were covered by a pressure bandage until staining had disappeared. Cauterization was repeated if staining persisted over several days. The longest duration of recurrent staining was thirty days and the shortest four days. The average was ten days. Iris irritation was treated by 1/5 per cent scopolamine hydrobromide ointment. All the patients except the first three were given iodine drops, (one per cent solution of potassium iodine containing compound solution iodine, U.S.P., two drops to the ounce) suggested by Cowan[2] in the treatment of superficial punctate keratitis. These drops were used in the affected eye three times a day, except on days when tincture of iodine was used. This treatment seemed very effective in preventing the outbreak of new lesions after the healing of the initial ones, and seemed to shorten the course of the disease. This treatment seemed equally effective in the one case of keratitis metaherpetica. It would be interesting to know if occasional use of these iodine drops might prevent future recurrence of the disease.

SUMMARY

1. Nineteen cases of herpes simplex of the cornea were successfully treated by cautery of the affected area with tincture of iodine followed by occlusion during the active period of the disease.

2. The instillation of iodine drops three times

daily seems to be helpful in preventing the formation of new lesions.

601 Higley Building.

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Discussion

Dr. J. E. Dvorak, Sioux City: I wish to compliment the essayist on presenting a very interesting paper on a relatively common, yet important disease. We may call it a disease because recent investigations have practically shown it to be a disease entity. The similarity of herpes simplex and herpes zoster in their symptoms, clinical pictures and bacteriologic characteristics is striking. There are certain points of difference which are yet to be explained. The association of herpes zoster and chickenpox still remains a question.

The treatment of herpes simplex requires little comment. Iodine treatment, described by the essayist, is without question, the treatment of choice. The treatment must do one thing; it must cause a destruction of the corneal epithelium, together with the offending virus. Iodine seems to do this in a very effective manner. The use of iodine as described, does not produce scarring of the cornea. Ultra violet irradiation is frequently used in the treatment of this lesion. Recent investigation by Gunderson, has shown that the ultra violet ray has no germicidal effect on the virus. If any result is obtained, it comes from some unknown secondary effect. This investigation has also shown that x-ray has no effect on the virus. However, most of us agree that x-ray is of definite benefit in allaying the pain associated with herpes zoster.

I wish to cite a case to illustrate a point in my discussion. A woman, twenty-six years of age, with history of bilateral trachoma of ten years, has had one or two acute attacks of trachoma every year. She had the usual symptoms of pain, lacrimation and photophobia. The examination revealed both eyes markedly inflamed, the cornea markedly vascularized and a herpetic lesion on the lip. Stain of the cornea with fluorescein showed a definite herpetic lesion of the cornea.

Dr. John H. Matheson, Des Moines: The most discouraging aspect of herpes simplex is its recurrence when it seems to have at last become inactive. Its diagnosis is not difficult when the cornea is examined by the slit lamp, although the lesions vary markedly in appearance. A typical dendritic ulcer is recognized almost at a glance.

Duke Elder states that 60 per cent of the cases of herpes simplex are preceded by some systemic infection, most commonly of the upper respiratory tract (influenza and pneumonia), but may follow injuries, malaria, typhoid, antityphoid inoculation, therapeutic malarial inoculations, artificial pyrexia by diathermy, and protein shock therapy. Its recurrences have been closely associated with menstruation. Fortunately the ulceration is usually only superficial and destruction to vision is ordinarily not great unless secondary infection intercedes, and then extensive scarring and diminution of vision occurs.

When iritis accompanies the ulceration, dilation of the pupil is imperative, both for relief from pain and prevention of synechiae. Often the iris reaction is very slight and can be determined only by slit lamp visualization of the anterior chamber leukocytic reaction. If such examination is not available the pupil should, therefore, be dilated in every case.

Most common of the treatments for herpes simplex is iodine cauterization. The most drastic and, according to Duke Elder the treatment "par excellente", is the application of a strong alcoholic solution of iodine early, and over a large area, causing necrosis of the epithelium which repairs rapidly, so that staining disappears after four or five days. This is described as a safe and effective method of aborting and preventing recurrence of the disease. In extensive ulceration, wide scraping of the epithelium may be done preceding the application of the iodine solution. Light bandaging, hot applications and alkaline solutions are also advocated.

Selinger reports successful treatment with two per cent quinine bisulphate ointment. Dionine and two per cent mercurochrome have been used as accessory remedies. Cocaine is contraindicated as a relief from pain but Post considers it safe in the form of an alkaloid in oil. Actual cautery is recommended only in severe suppurative cases.

CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

SUBACUTE BACTERIAL ENDOCARDITIS TREATED WITH SULFANILAMIDE*

REPORT OF A CASE

ROBERT L. BARTON, M.D.,
and
DOROTHY STINGER, M.S., Iowa City

A host of remedies has been proposed and tried in the treatment of subacute bacterial endocarditis. The fatality rate of the disease speaks eloquently for their inefficacy. With the advent of sulfanilamide, a drug whose potency in the treatment of streptococcal infections has been repeatedly demonstrated, it was inevitable that it be used in the treatment of this condition.

Since 1935 only three patients with subacute bacterial endocarditis treated with sulfanilamide with varying degrees of success have been re-

*From the Department of Pediatrics.

ported. McQuarrie[1] reports the case of a six year old boy treated for sixty-six days with 22 grains (1.4 grams) of sulfanilamide daily. Blood cultures made one week after therapy had been instituted revealed a streptococcus of "undetermined type". Subsequent to treatment the child's temperature became normal and blood cultures were repeatedly negative. Hussey[2] reports a case of probable streptococcus hemolyticus endocarditis treated with sulfanilamide for twenty-five days with a daily dosage of 80 grains (5.2 grams). Following administration of sulfanilamide, repeated blood cultures revealed no growth.

Major and Leger[3] report a proved case of subacute bacterial endocarditis in which the patient was treated with a fairly intensive dosage of sulfanilamide over a period of one month. Blood cultures made during the first three days of treatment were positive for streptococcus viridans. Seven cultures made between the tenth and forty-seventh days of treatment were negative. It is the purpose of this paper to report a case of subacute bacterial endocarditis in which the patient was treated with sulfanilamide with most encouraging results.

CASE HISTORY

The patient, a white girl, four years of age, was brought to the pediatric service of the University Hospitals on September 10, 1938, with the complaint of fever and pain in the left side. The patient's illness began in February, 1938, with a "cold" and sore throat, accompanied by fever. The sore throat lasted two weeks. The mother thought the child had had fever throughout March and April, although a thermometer had not been used. On July 4 the patient suddenly developed a sharp pain in the left side beneath the lowest two ribs. This was associated with respirations which were limited in excursion and with grunting on expiration. The patient had no cough at this time. No blood was seen in the urine. Upon taking the patient's temperature at this time the child's physician found fever. He informed the mother that the child had "heart trouble with slight leakage". The pain subsided after four or five days, but the fever persisted. On August 7 the pain recurred in the same location. Following a period of anuria of twenty-four hours' duration the patient was hospitalized for six days. On September 4 there was another episode with pain in the left side, this time, however, intermittent in character, lasting three to four hours at a time and recurring several times over a four day period.

The patient's past history was essentially negative, except for the fact that she had been fed unpasteurized milk and had received no cod liver oil. The family history disclosed no heart disease. On admission the patient's temperature was 100 degrees, the pulse rate 110, and respiratory rate 24 to the minute. Physical examination revealed an undernourished, but well developed child who was acutely ill. The skin was cold and moist, and there were no petechiae. The examination of the head and neck was negative except for hypertrophic tonsils and adenoids, and a few enlarged lymph nodules in the posterior pharynx. There was no evidence of inflammation in the pharynx.

Examination of the lungs was negative. The left border of cardiac dullness was at the nipple line, and the point of maximum impulse was two centimeters inside the nipple line, in the fifth intercostal space. The heart rate was 110 to the minute and regular. There was a loud hissing systolic murmur which was transmitted from the

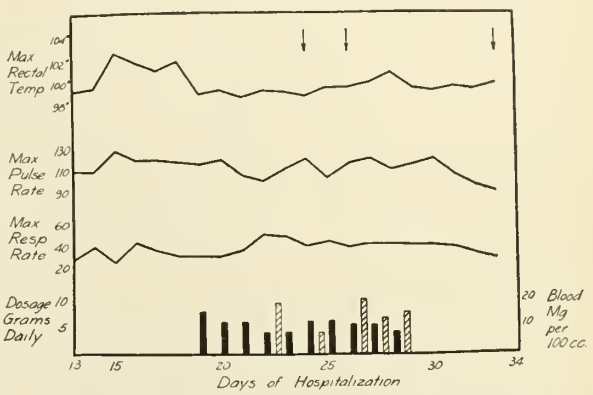


Fig. 1. Solid columns indicate daily sulfanilamide dosage in grams; crosshatched columns, the level of sulfanilamide in blood as milligrams in 100 cubic centimeters. Arrows indicate blood transfusions.

precordium laterally to the mid-axillary line, and best heard just to the left of the sternum in the fifth intercostal space.

Examination of the abdomen revealed a smooth spleen which extended three finger-breadths below the costal margin. The genitalia were those of a normal female child. There was no edema of the extremities, nor was there any evidence of clubbing of the fingers or tenderness in the pads of the fingers and toes.

On September 11 examination of the urine showed in each high power microscopic field five to eight red blood cells, three to nine white blood cells, and no casts. The hemoglobin content of the blood was 9.5 grams for each 100 cubic centimeters (Haden-Hauser). The red count was 4.55 million, and the white count 12,300, of which 59 per cent were neutrophils, one per cent eosinophils, one per cent basophils, 28 per cent lymphocytes, and eleven per cent monocytes. The Wassermann reaction was negative. Intradermal tuberculin test was negative for both human and bovine types. An

electrocardiogram disclosed a left axis deviation with normal mechanism. A teleoroentgenogram on September 13 showed congestion in both lung fields, fluid in the left costophrenic angle, and cardiac enlargement. The Danzer ratio was 0.60.

During the first week after admission the temperature remained normal. On the ninth and tenth days it rose to 102.2 degrees. From the fifteenth through the eighteenth days the temperature rose to a level of 103 degrees. Except for one reading of 101 degrees on the twenty-eighth day there was no further fever. Blood cultures made on the second, eleventh, and twelfth days were positive for streptococcus viridans. Sulfanilamide therapy was started on the nineteenth day of hospitalization and continued through the twenty-eighth day, the dose varying from four to eight grams daily. Determinations of the blood sulfanilamide level were made at frequent intervals and ranged from eight to twenty milligrams in each 100 cubic centimeters. Blood cultures made on the thirty-second and thirty-fifth days were negative. During the administration of sulfanilamide the respiratory rate rose very high, cyanosis was marked, and on the twenty-sixth day the patient developed an asymptomatic generalized maculopapular eruption, which was thought to be a drug eruption. The rash promptly disappeared upon the cessation of sulfanilamide therapy.

The patient received three transfusions of 200 cubic centimeters each on the twenty-fourth, twenty-sixth, and thirty-third days of hospitalization. She was sent home from the hospital on October 21, 1938, advised to remain in bed, and was told to return in one month for re-examination.

She returned on November 23, 1938, reporting no further painful episodes and a five pound gain in weight. Thermometer readings made throughout the month by the mother were normal. Physical examination at this time revealed a loud systolic murmur over the precordium, best heard in the fourth intercostal space, and transmitted to the neck, back, and axilla. The spleen was not palpable. The hemoglobin was 14 grams in each 100 cubic centimeters, the red blood count 5.28 million, and the white blood count 9,150. She remained in the hospital for nine days, during which time her temperature never exceeded 100 degrees. Blood cultures made on four consecutive days were negative. She was sent home on December 2, 1938.

COMMENT

In discussing the benefits accruing from the treatment of any disease it is of prime importance to establish the correct diagnosis. In this case the diagnosis rests upon fever, previously known cardiac disease, and symptoms indicating repeated emboli to the spleen. The physical findings of systolic murmur, large spleen, anemia and repeated blood cultures positive for streptococcus viridans, substantiate this diagnosis. It is probable that a congenital abnormality of the heart preceded the advent of the bacterial invasion.

Several cases of spontaneous healing of subacute bacterial endocarditis are recorded in the literature.[4 to 8] Other authors, however, record no recoveries in large series of cases.[9 and 10] We recognize the possibility that in this case healing may have occurred spontaneously. It is, however, extremely improbable that the spontaneous cure should have occurred during the ten days of sulfanilamide administration.

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THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

CEREBRAL HEMANGIOMA CAUSING SUDDEN DEATH

F. P. McNAMARA, M.D., Dubuque, and
HENRY H. WOLF, M.D., Elgin

The sudden and unexpected death of a young adult previously considered well is always an interesting pathologic problem. The case to be presented is of special interest because of the lesion, a hemangioma of the cerebrum, found at necropsy.

CASE REPORT

The patient, a white woman school teacher twenty-seven years of age, was first seen by one of us (H.H.W.) at 8:00 a. m. December 7, 1938, because she had been found in a comatose condition by her landlady. The latter stated that she had retired in excellent spirits on the previous evening but when she had not arisen at the usual time an investigation showed her to be uncon-

scious. Upon examination she was completely relaxed and had had one involuntary urination. She was breathing very deeply but regularly. The pulse was 100 per minute. The pupils reacted to light and accommodation and the other reflexes were normal. The heart and lungs were negative, as was the remainder of the examination. Search of the room showed no evidence of a struggle, and no drugs were found. Since she had never been seen as a patient before, her family doctor in another town was called and he stated that aside

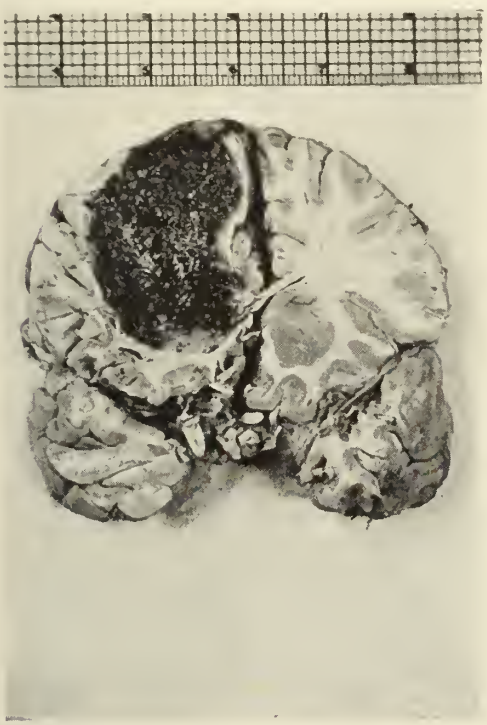


Fig. 1. Cross section of the brain showing the tumor of the right frontal lobe.

from an occasional headache which had occurred irregularly once or twice a month for several years, she had always been considered in good health. The headache often caused her to stay in bed for one-half a day. There was no history of previous illness or of epilepsy but during the previous summer she had had two attacks when she seemed to lose consciousness for a very short time. She had been very efficient in her duties as a school teacher.

While it was impossible to make an exact diagnosis, the provisional clinical diagnosis rested between brain tumor or hemorrhage, diabetic coma and coma due to a drug. She was sent to the Decorah Hospital where the blood sugar was found to be 210 milligrams per 100 cubic centimeters. Before further studies could be made, she died without regaining consciousness.

Differential Diagnosis: While the hyperglycemia was suggestive of diabetes, the sudden onset of the coma in the absence of an acute infection or of dietary indiscretion made this diagnosis seem very doubtful. There was no indication that the patient had been in the habit of taking drugs, although this was considered a possible diagnosis. Because of the patient's age, brain hemorrhage seemed unlikely and therefore brain tumor appeared to be the most probable diagnosis.

Necropsy: The necropsy showed all the organs except the brain to be normal. The dura seemed to be tense and bulging on the right side. On removal it was of normal thickness and was unattached to the brain. The right half of the latter was definitely larger than the left side and six centimeters back from the anterior tip of the right frontal lobe there was a brownish area 2.5 cubic centimeters in diameter, involving the brain substance. This area felt boggy and evidently contained fluid. On section considerable bright red blood escaped. After removal with salt solution, a tumor mass, eight centimeters in the anteroposterior diameter and varying between four and five centimeters in its lateral diameter, was found extending from the brownish area seen externally, down toward the ventricle. It had replaced much of the brain substance. The mass

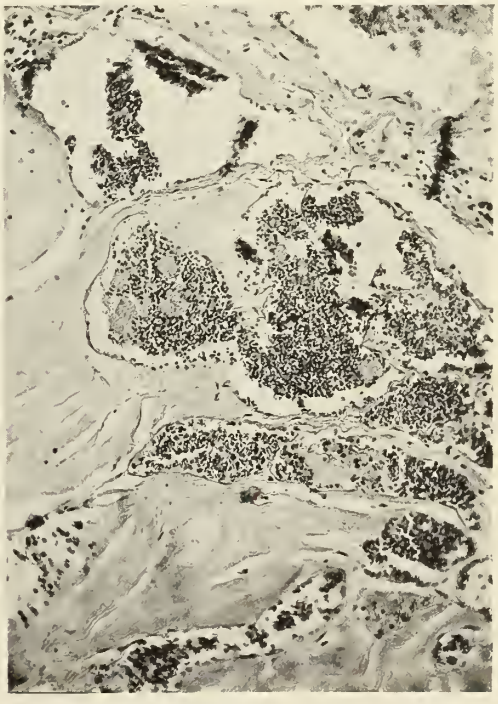


Fig. 2. Photomicrograph of the tumor.

was dark red apparently due to blood and was honeycombed by numerous, thin, fibrous septa. Toward the center there were coral-like areas of calcification (Fig. 1).

Microscopically the tumor was composed of thin walled spaces lined by flattened endothelium and containing red blood cells. They varied greatly in size but were separated by thin connective tissue walls or by hyalinized connective tissue which in some areas also showed deposits of calcium salts. (Fig. 2.) A diagnosis of hemangioma with hemorrhage was made.*

DISCUSSION

In 1928 Cushing and Bailey[1] published their monograph on blood vessel tumors of the brain and thus clarified both the clinical and pathologic phases of the different types of these tumors. Since that time numerous reports of these tumors have appeared in the literature, but very little new knowledge has been added. Therefore, this discussion will be largely quoted from their work to which the reader is referred for more detailed study. They divided blood vessel "tumors" into two major groups; "first, the angiomatous malformations; and second, the angiomatous blastomas or true neoplasms of blood vessel elements."

The angiomatous malformations may be chiefly capillary (telangiectatic), chiefly venous (angioma venosum) or arteriovenous (angioma arteriale) in their composition. They commonly occur in the cerebral hemispheres and are often provocative of epileptiform attacks, frequently Jacksonian in character. Only occasionally are these lesions found in the midbrain. The venous angiomas are sometimes associated with trigeminal nevi and the presence of the latter may give a hint as to the brain lesion.

The angioblastomas are rarely if ever accompanied by facial nevi but some of them at least, if not all, have a congenital anlage since the lesions may be multiple. Some of the cerebellar hemangioblastomas are associated with a similar lesion in the retina (Lindau's disease). Their favored site is the cerebellum where they may be largely cystic or largely solid lesions. Histologically they are divided into those predominantly capillary, predominantly cellular, and predominantly cavernous. Rarely, however, do we find any tumor of a pure type, because they differ in degree rather than kind.

Incidence: In their analysis of 1,522 histologically verified intracranial tumors, Cushing and Bailey listed the following blood vessel tumors:

A. Vascular malformations	16
Telangiectasis	1
Angioma venosum (all diagnosed by inspection only)	6
Angioma arteriale (Eight diagnosed by inspection and bruit)	9
B. Hemangioblastomas (cerebellar)	13
Cystic	7
Capillary	3
Cellular	2
Cavernous	2
Solid	4
Capillary	1
Cellular	2
Cavernous	2
Diagnosed by inspection only	2

It will be noted that only cerebellar hemangioblastomas are cited. In their discussion the authors were somewhat skeptical of their occurrence in the cerebrum. In their opinion the great majority of the cases reported should actually be classified under the vascular malformations. However, in the study of reported cases they found a few with either adequate histologic descriptions or photomicrographs which made the diagnosis of hemangioblastoma of the cerebrum reasonably certain. They emphasized, however, that the cerebellum is the site of election of these tumors. The "tumors" occur at all ages, but the great majority give rise to symptoms in the third and fourth decades. The diagnosis is like that of other brain tumors, but their nature may be suspected if they are associated with facial nevi or retinal angiomas. In some forms there may be an audible bruit over the tumor.

Treatment: The treatment of the blood vessel malformation has not been very satisfactory according to Bailey.[2] Attempts at extirpation have usually ended in disaster. If one is reasonably sure of the diagnosis, roentgen radiation should be tried before craniotomy is undertaken. This ameliorates the symptoms and may so reduce the vascularity as to make it possible to extirpate them at a subsequent operation. If they are found at operation, Bailey advises leaving them strictly alone. Later they should be subjected to radiation and possibly removed at a second operation. More recently Butsch and Adson[3] have reported good results in one case treated by electrocoagulation.

The cerebellar hemangioblastomas, like other cerebellar tumors, should be treated, when possible, by extirpation. If the tumor is cystic it is necessary to remove the mural tumor nodule; otherwise a recurrence of symptoms due either to refilling of the cyst or progressive enlagement of the tumor may be expected.

*A portion of the tumor was sent to Dr. Percival Bailey, University of Chicago, who very graciously consented to study it. Dr. Bailey's diagnosis was cavernous hemangioma. We are grateful to him for his aid in classifying the tumor.

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State Department of Health

Walter L. Bierring

Typhoid Fever in Iowa in 1938

Consideration of Case Reports
Completed and Returned by Attending Physicians

During 1938, typhoid fever cases, numbering 185, were reported to the Iowa State Department of Health.

Food-Borne Epidemic Traced to Carrier

A food-borne epidemic in Linn county accounted for 45 of the 185 cases. Several weeks prior to the outbreak, 110 persons were served with potato salad prepared by an elderly woman. Ninety of the 110 individuals who were exposed, were apparently susceptible to typhoid fever; 44 acquired the infection, one subsequent or secondary case completing the series. Early diagnosis and effective isolation of the cases, together with prompt inoculation of all contacts, prevented the development of more secondary cases. The elderly woman who prepared the potato salad proved to be a typhoid carrier and must be regarded as having been the source of infection. (For a more detailed account of this epidemic, the reader is referred to page 413 of the current number of the Journal.

CONSIDERATION OF 140 SPORADIC CASES

In addition to the above mentioned epidemic, there were reported 140 sporadic cases of typhoid fever. Attending physicians forwarded detailed case records concerning 109 of these cases.

Age and Sex Distribution of Reported Cases

Ages of the patients represented by the case records showed a range of from one to seventy-six years. Fifty-two of the 109 patients were under twenty years of age, 36 were between twenty and fifty, and twelve were over fifty. The age in nine instances was not stated on the record. Sixty-one of the patients were males, 48 were females. Forty-eight were rural residents, 61 lived in cities or towns.

Secondary Cases in Homes

The case records show that in the homes with primary cases of typhoid fever, at least fourteen secondary cases developed. The occurrence of additional (secondary) cases emphasizes the need for early diagnosis, proper isolation of the patient and immediate inoculation of all contacts with typhoid vaccine.

Past History of Typhoid Fever in Homes

Fifty-one of the 109 patients resided in homes where typhoid fever had existed at some time in the past; it is probable that a more detailed search for carriers in the various homes would have disclosed the identity of more carriers.

Typhoid Carriers Spread Typhoid Fever

Through cooperation with attending physicians, fourteen typhoid carriers were discovered and placed under supervision in 1938. One of the persons shown in 1938 to be a carrier gave no history of having had typhoid fever; however, during the preceding twelve years, nine cases of the disease with four deaths developed among persons, apparently as the result of contact with this carrier. Carrier No. 2 was the evident source of infection of typhoid fever in the case of her husband in 1931, of a maid in 1936, of a hired man in 1937, and of another maid in 1938. Carrier No. 3 was discovered following the occurrence of typhoid fever in his wife, a bride of several months; the same carrier also apparently gave rise to typhoid fever in another person, early in 1938. A fourth carrier had typhoid fever in 1930, was

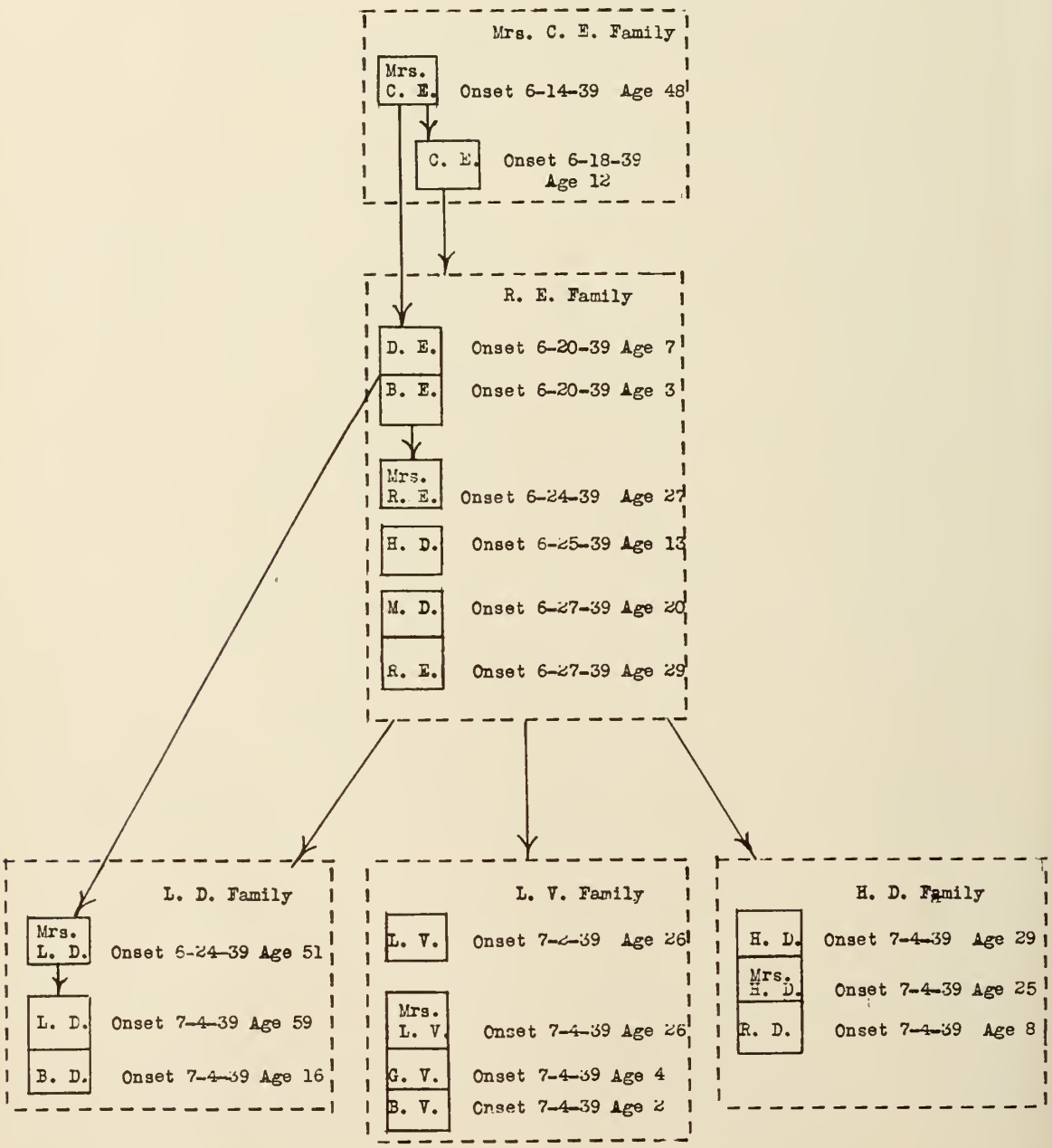
(Concluded on page 409)

BACILLARY DYSENTERY OUTBREAK

During July, two children from a farm in Adair county were under treatment at Iowa Methodist Hospital in Des Moines. Symptoms and signs were those of diarrhea and enteritis, with high fever, severe abdominal cramps and diarrhea. Report was made to the State Department of Health by James Kahler, M.D., hospital pathologist, of the finding of a Hiss-Russell strain of dysentery bacillus in the bowel discharges of these children. Relatives of the patients stated that other persons, adults as well as children in the same rural community, had recently suffered an attack of intestinal disorder.

Field investigation of diarrhea and enteritis or dysentery was made in Adair county, through the preventable disease division of the State Department of Health. As the result of conferences with attending physicians and home visits, knowledge was gained of sixteen additional cases, which clinically and from the epidemiologic standpoint were regarded as due to bacillary dysentery. The accompanying diagram (Fig. 1) indicates the probable manner of spread of infection among the pa-

FIG. 1. CASE CONTACT IN BACILLARY DYSENTERY OUTBREAK



tients, eighteen in all, in the several closely related families.

As indicated in the illustration, illness began in the home of Mrs. C. E., who became ill on June 14, 1939, and C. E., who had onset of symptoms on June 18, 1939. Two children, D. E. and B. E., members of the R. E. family, visited Mrs. C. E. during her illness and on June 18, Mrs. C. E. and her son visited the R. E. family.

Beginning in the R. E. family on June 20, 1939, dysentery (diarrhea and enteritis) spread rapidly among remaining members of the R. E. family and other families. Mrs. L. D. became ill prior to the rest of her family, due to contact with the children, D. E. and B. E., during the early part of their illness.

The mode of transfer of infection in these families was probably through contamination of food, water or possibly milk. Whether contamination resulted from direct contact on the part of infected persons, or through the agency of flies, is difficult to determine. Nearly all of the patients ate meals at the R. E. home during the illness of the children and before their removal to Iowa Methodist Hospital. Sanitary conditions in the homes were unsatisfactory. The wells for the most part were poorly constructed, as were also the outside toilets. On several farms, the wells were within 100 feet of the toilet or barn lot; flies were numerous and screens in poor repair.

Bacillary dysentery is undoubtedly of more frequent occurrence than is shown by official reports. It was noted in the recent investigation that the disease is highly communicable. Among nineteen persons in five different families, eighteen were attacked; only one individual in the group of nineteen escaped clinical manifestations of dysentery.

It is desirable that epidemics of diarrhea and enteritis or dysentery be reported to district or county health officials and to the State Department of Health; in this way, laboratory and epidemiologic investigation may throw light on the etiology and be of value in control and prevention.

TYPHOID FEVER IN IOWA IN 1938

(Continued from page 407)

the apparent source of infection of his sister's fatal illness in 1932, and of a nephew's illness investigated in 1938. The fifth carrier apparently caused a case early in 1938 and another later in the same year; the patients had lived in two households of which the carrier was a member during the year. Carrier No. 6 (eighty years of age) was discovered in 1938, the result of investigation of a case of typhoid fever. This carrier, according to the history, apparently caused 70 cases of typhoid fever between 1905 and 1936, including a milk-borne epidemic in 1923. (Carrier No. 6 died in May, 1939.) The remaining eight carriers were identified following the occurrence of single cases of typhoid fever among their associates.

SUMMARY

The typhoid fever case reports for 1938 emphasize the major rôle of typhoid carriers in the perpetuation of typhoid fever. The prevention and control of typhoid fever are dependent to an unusual extent upon the attending physician, upon his cooperation in securing the necessary fecal and urine specimens before the release of the typhoid patient, and upon his interest and effort in revealing the probable source of the patient's infection.

INSTITUTES ON PREMATURE INFANTS

The Department has engaged Daisy Prentice, R.N., formerly associated with Julius H. Hess, M.D., in the Premature Station, Sarah Morris Hospital, Chicago, Illinois, to conduct institutes on the problems and nursing care of premature infants to be held September 18 in Creston, September 19 in Sioux City, September 20 in Fort Dodge, September 21 in Waterloo, and September 22 in Iowa City.

Private duty, institutional and physicians' nurses, assistants and others interested in the subject, as well as public health nurses, are invited to attend these meetings. No fee will be charged.

Further information may be obtained from the State Department of Health.

DR. VAUBEL APPOINTED

Ellis K. Vaubel, M.D., of Dysart, graduate of the University of Iowa, has been appointed assistant director of the Division of Preventable Diseases, Iowa State Department of Health. Dr. Vaubel assumed his duties July 15, succeeding Paul Stephen, M.D., who resigned to enter private practice at Manchester, Iowa.

PREVALENCE OF DISEASE

	June '39	May '39	June '38	Most Cases Reported From
Diphtheria	18	10	5	Black Hawk, Scott
Scarlet Fever	144	376	180	Polk, Black Hawk, Muscatine
Typhoid Fever	11	20	3	Polk, Hardin, Marshall
Smallpox	54	167	114	Polk, Scott, Henry
Measles	511	851	1036	Dubuque, Montgomery, Cerro Gordo
Whooping Cough	131	90	102	Des Moines, Woodbury, Floyd
Cerebrospinal Meningitis	2	1	3	Clay, Poweshiek
Chickenpox	139	322	173	Linn, Black Hawk, Woodbury
Mumps	111	185	92	Des Moines, Page, Woodbury
Influenza	9	13	2	Boone
Poliomyelitis	0	0	1	
Rocky Mountain Spotted Fever	11	5	1	(For State)
Tuberculosis (Pulmonary)	50	67	53	(For State)
Undulant Fever	38	22	12	(For State)
Gonorrhea	163	128	197	(For State)
Syphilis	242	237	276	(For State)

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HOSPITAL SERVICE OF IOWA, INCORPORATED*

Organization of a prepayment plan for hospital service under the enabling act passed by the last legislature is well under way, and policies and contracts will be available about the first of September. The official name will be Hospital Service of Iowa, Incorporated. The articles of incorporation have been approved, by-laws have been adopted, and officers for the first year's operation have been chosen. With the assurance, under the law, that this company will remain under the control of the hospitals and medical profession of the state, we may feel confident that the corporation will be properly managed and will operate in an ethical manner. Publicity will begin to appear in the newspapers of the state as soon as a few details are completed and have been approved by the insurance commissioner.

The board of directors will consist of nine members, six of whom will be chosen by the member hospitals cooperating in the plan, and three of whom will be chosen by the Iowa State Medical Society. Of the nine members so selected, two will be laymen who have no connection with either hospital or medical services. Thus there will be representation from the general public, the hospitals and the medical profession. The officers have been chosen from the board of directors, and the standing committees appointed. Drs. Fred Moore and Martin I. Olson, of Des Moines, and Dr. Ernest E. Shaw of Indianola, were appointed to act on the board as representatives of the Iowa State Medical Society for the first year.

The exact form of the contract has not yet been issued, but it will provide for regular hospital services to include room, board, floor nursing service, routine laboratory procedures, and a limited amount of medicines and dressings. X-ray services and anesthesia are not included, since they are definite medical services. Policies will be issued to groups only, at first, with the payment for the group made through one person, or by payroll deduction where that is possible. The insured individual will be able to include care for his entire family at a slight increase in premium. Hospital care will be given for a stated number of days, probably twenty-one, in the member hospitals, in semi-private or ward rooms. If the subscriber is cared for in a non-member hospital, or in one outside the state, a per diem payment will be made to the hospital on his hospital bill. If the insured desires a higher priced room, he may have it by paying to the hospital the difference in the cost of the rooms.

This general plan, as is well known to the members of the medical profession, has been in use for several years in various cities throughout the country, and has proved popular with the public. For the employed individual, especially one in the relatively low income group, it is a great boon to feel that he is provided for if it becomes necessary for him to go to the hospital. Although he may be without income due to sickness, he can enter the hospital without the feeling that when he is released there will be a long period during which he will have to use every available dollar to pay the costs of his sickness. The hospitals, with the accounts of these patients guaranteed through insurance, will be relieved of a load which has made it difficult for them to render the best service and keep their budgets balanced.

The success of this plan, as of any other prepayment plan, depends on the cooperation of the hospitals, the patients and the physicians. If the patients demand hospital services for minor conditions, the premium which is charged will not cover the costs. Hospital stay will have to be made as short as is consistent with full recovery, and this factor can be determined only by the physician. The Hospital Service of Iowa, Incorporated, is so organized that it must be operated without profit to any one individual or group. Members of the board and officers of the organization serve without pay. Salaries are paid only to the managing director and the various individuals who will serve as full-time employees of the company. The operation of the company, the investment of any funds, and the expenditure of money is under the supervision of the Insurance Commissioner of Iowa. Annual reports to the insurance commissioner are required, and funds can be invested only in those securities which are

*From the Medical Economics Committee.

approved for investment of funds by insurance companies.

The medical profession of the state has been instrumental in securing the passage of the enabling act, and in the organization of the company under that act. It will naturally be vitally interested in the success of the project.

A. M. A. INDICTMENT OVERTHROWN

Justice James M. Proctor, upholding a defense demurrer to indictments, ruled on July 26 that the American Medical Association and its fellow defendants were not engaged in a trade as defined by the antimonopoly statutes. Counsel for the doctors had contended their activities could not be governed by the antitrust law, that they were engaged in a "learned profession" rather than a trade.

On December 20, 1938, a District of Columbia grand jury, acting on evidence presented by the Justice Department, indicted the American Medical Association, the Medical Society of the District of Columbia, the Washington Academy of Surgery, the Harris County (Texas) Medical Society and twenty-one individual physicians for violation of the Sherman Antitrust Law. These organizations and individuals, the indictment read, were "engaged in a continuing combination in conspiracy in restraint" of trade in hampering the activities of Group Health Association, Incorporated, for the District of Columbia, an organization established in 1937 to hire physicians and nurses and provide hospital care on a cooperative basis to government employees. Defense attorneys had contended that their clients' activities were directed solely at the maintenance of the ethics and standards of the profession.

Officials of the American Medical Association have issued the following statement:

"The principles and policies of the American Medical Association do not forbid nor have they ever contemplated any opposition to a well considered expanded program of medical service, when the need can be established; neither is there any fundamental principle or policy which in any manner opposes aid to the indigent when indigence can be established.

"The American Medical Association has always welcomed investigation by any authorized agency of the nature of its organization or of the conduct of its work or of its activities, firmly reliant in the belief that every action taken by the Association has been in accordance with its constitutional organization in the interests of the public welfare for advancing standards and quality of medical service for the American people; and that at no time has it violated the established law of the federal, state, or municipal governments of this country. Moreover, by the very nature of its organization, it has preserved constantly the democratic principles on which the government of the United States is founded and maintained."

This favorable action should not, however, lull the physicians of the country into any false sense of security. There is every indication that this is not the end of the controversy. It has been announced that the Department of Justice will appeal to the higher courts. It is highly desirable for each physician to keep uppermost in his mind the importance of educating the lay public so that it may more fully understand the professional viewpoint. We are confident that with successful education will come understanding and cooperation.

THE RELATION OF TONSILLECTOMY AND POLIOMYELITIS

The precise route by which the poliomyelitis virus enters the human organism has not been definitely established. The most commonly accepted theory is that the virus enters through the nasal mucosa along the olfactory nerves and olfactory bulb to the central nervous system. Toomey and Harman contend that the portal of entry is from the intestinal tract along the sympathetic nerve fibers to the spinal cord. Epidemiologic and laboratory studies appear to confirm the nasal theory of entry.

In 1928 Ayer reported nine cases of poliomyelitis following tonsillectomy and adenoidectomy. In 1929 Aycock and Luther reported sixteen cases of poliomyelitis occurring shortly after the removal of the tonsils. Stillerman and Fischer recently report ten cases following tonsillectomy in 1935, and three cases in 1937. The author of this article has seen two cases of poliomyelitis in which the onset occurred within a week after tonsillectomies. In the reported cases in which the onset of poliomyelitis occurred shortly after removal of tonsils the majority were characterized by bulbar involvement.

It seems apparent that trauma to the tissues of the nasopharynx disposes to the entrance of the virus into the body. Fairbrother and Hurst have demonstrated that the virus travels along the axis cylinders in the central nervous system. The nerves which supply the nasopharynx originate in the brain stem and this would seem to explain the high incidence of bulbar involvement following extirpation of the tonsils.

The frequency with which the onset of poliomyelitis follows the surgical removal of tonsils should discourage the procedure during the season when the disease occurs, and particularly when it is epidemic.

THE WAGNER BILL ON VACATION*

After committee hearings intermittently for two months, the senate leadership ceased its efforts to have the national health bill (introduced by Senator Robert F. Wagner of New York,) brought before the present session of the United States Senate for consideration. This does not mean that the bill has been abandoned. It probably means that senate leadership believed it to be politically unwise at this time. It may mean that the bill was not in satisfactory form. The measure will probably be brought up in the next session of Congress. Newswriters have emphasized that enactment of national health legislation will become one of the objectives of Paul McNutt in his new administrative position in Social Security. The fact that the United States Public Health Service was placed in his department may be significant in this respect. Newswriters have also indicated that the Republican committee under the direction of Glenn Frank has developed similar provisions for the 1940 Republican platform. If these assertions are correct, it indicates how health becomes a political football. "The outs" are developing a health bill for their platform as a vote catcher; "the ins" will make a strenuous effort to enact a measure before the next general election for the same reason— and thus deprive "the outs" of their thunder.

The following incident indicates how rapidly legislative activity at Washington changes, and the necessity that some one be on the ground and "on the job" if we are to be adequately informed. Under date of June 29, William C. Woodward, director of the Bureau of Legal Medicine and Legislation of the American Medical Association, addressed state society officers concerning an amendment to H. R. 6635, which Senator Wagner proposed to offer, still seeking avenues of extension of federal services. The amendment would authorize the Social Security Board to make provision for furnishing medical, surgical, institutional rehabilitation, or other services to an ill-defined class of persons who are unable to work because of disability that may be relieved or removed by such services. The plan seems to contemplate the establishment of a national medical service for the benefit of such persons, regardless of their ability to provide for themselves. The House bill which this would amend was then before the Senate Committee on Finance. On July 5 the Legislative Committee of the Iowa State Medical Society wired Senator Clyde L. Herring:

"Our representative at Washington advises Senator Wagner proposes amendment to H. R. 6635 now before Senate Committee on Finance of which you are a member. Wagner amendment to H. R. 6635 authorizes Social Security Board to provide medical, hospital and rehabilitation service to persons unable to work because of remedial disability. Plans seem to provide for all disabled person regardless of economic status. It is our impression that class of persons to be served is poorly defined, that plan constitutes in some measure, objectionable national medical service act, and constitutes an expense which federal government need not assume. Iowa State Medical Society requests that you scrutinize measure with discrimination and give consideration to objections raised herein."

On July 6 Senator Herring replied as follows:

"Have your telegram. We are considering the amendment in which you are interested this afternoon. I shall oppose it and believe we will be able to defeat it in committee."

Our appreciation of his attitude was immediately sent to Senator Herring. On July 7 he wired:

"Bill to which your telegram refers was not and will not be considered in committee. Completed bill therefore will not contain amendment."

Our conclusion here is that Senator Wagner's amendment was not well received by the Senate Finance Committee, and it appears that our own Senator Herring was influential in keeping it out.

W. W. Waymack, editor of the Des Moines *Register,* returned August 5 from a trip around the world. In discussing non-profit hospital service plans, Mr. Waymack said that on this trip he was impressed with the fact that there is no nation of any consequence, democracy or otherwise, that is not giving increasing consideration to health service for its people. Mr. Waymack favored voluntary plans under professional control in preference to governmental programs under political control on compulsory tax basis.

*From the Legislative Committee.

FACULTY CHANGES AT THE STATE UNIVERSITY OF IOWA, COLLEGE OF MEDICINE

The following faculty promotions at the State University of Iowa, College of Medicine, have been announced by Dean E. M. MacEwen: Dr. Wilbur R. Miller, promoted to associate professor of psychiatry; Dr. Olan R. Hyndman, to associate professor of surgery; Dr. John W. Dulin, to assistant professor of surgery; Dr. Jacques S. Gottlieb, to assistant professor of psychiatry; Dr. Adolph L. Sahs, to assistant professor of neurology; and Dr. Titus C. Evans, to research assistant professor of radiology.

Faculty resignations include: Dr. William Malamud, professor of psychiatry, resigned to become clinical director and director of research, Worcester State Hospital, Worcester, Mass.; Dr. Alson E. Braley, research associate of ophthalmology, resigned to become assistant professor of ophthalmology, Wayne University, College of Medicine, Detroit, Michigan.

A Food-Borne Epidemic of Typhoid Fever

Paul Stephen, M.D., and Carl F. Jordan, M.D., C.P.H.
Division of Preventable Diseases, State Department of Health, Des Moines, Iowa

On November 21, 1938, V. H. Hasek, M.D., city physician of Cedar Rapids, reported to the Iowa State Department of Health that there were cases and suspected cases of typhoid fever in that city. He asked that investigation be made to determine the probable source of infection.

Reports of Typhoid Fever Cases

Dr. Hasek was seen in his office November 22, by one of the authors (P.S.). At that time seven cases of typhoid fever had been diagnosed clinically and confirmed by positive agglutination tests. The city physician had received reports from lay sources to the effect that eleven other persons were ill, but had not consulted a physician or were not regarded as having typhoid fever.

Probable Exposure at Social Gathering

Investigation of the diagnosed cases revealed that all had attended a Hallowe'en party given by the X lodge, an organization of women. It was learned that the lodge had held two social meetings; a card party on October 24 was attended by 108 people, and a party on October 27 by about 55 lodge members. The former occasion proved the more significant in relation to the occurrence of typhoid fever.

Description of Food Served

At the party on October 27, pumpkin pie and whipped cream were served with coffee. Thirty pies were prepared by the same number of women. Pasteurized cream was supplied by a creamery. The lady who whipped the cream for the pies gave no history of having had typhoid fever in the recent or remote past. She mentioned the names of several persons who were ill and who had only attended the party on October 24; later investigation found this woman informant in the hospital, ill with typhoid fever.

At the party on October 24, potato salad, ground beef sandwiches and coffee were served. Cream for the coffee was donated by several ladies, and had been purchased at various stores. All of the potato salad, except two quarts, was homemade. The potatoes for the salad were boiled, after which the jackets were removed by an elderly woman (Mrs. Y), assisted by her daughter. On the following day, these potatoes were taken to another home where the housewife and a neighbor lady sliced the potatoes and added the other ingredients, onions and salad dressing, thinning with pasteurized cream from one of the dairies. Both of these women and the daughter of one, later developed typhoid fever. The daughter had not attended the party but ate some of the salad at her home.

Discovery of Additional Cases

The chairman of the entertainment committee furnished a list of all persons who attended the party on October 24; she also gave the names of thirty-one persons who later showed signs of illness. Attending physicians of persons who were sick following the social gathering on October 24 were advised concerning the occurrence of cases of typhoid fever in the city. The physicians were requested to obtain blood specimens for agglutination tests, to confirm or exclude the diagnosis of typhoid fever. During the next two days, the total number of reported cases of typhoid increased to sixteen. Diagnosis on these cases was confirmed by agglutination tests. All of the patients had attended the party on October 24, but only a few were present at the gathering held three days later. By November 29, a total of thirty-six cases of typhoid fever had been reported in Cedar Rapids over a period of nine days. With the exception of the patient who ate salad at her home, all had attended the party on October 24.

Group Survey and Results

It was deemed advisable to arrange for laboratory tests on all persons who had attended this party. Forty-five people were brought together; with the aid of the public health and visiting nurses of Cedar Rapids, blood was drawn for agglutination tests. Arrangements were also made for each person to prepare two specimens of feces. Twenty-two additional blood specimens were obtained at various homes and in the city physician's office. Altogether, blood specimens from sixty-seven persons were forwarded to the State Hygienic Laboratory.

The individuals who contributed specimens for agglutination tests, plus the thirty-six diagnosed cases, accounted for 103 of the 110 persons connected with the party. Of the remaining seven persons, only one refused to submit blood and fecal specimens; a second had moved to Minnesota after being immunized; two had eaten no food at the

party; the attending physicians agreed to obtain blood for agglutination tests on the remaining three.

Among sixty-seven blood specimens collected from persons who attended the party on October 24, but who had not consulted physicians, ten showed positive agglutination for typhoid fever, as reported by the State Hygienic Laboratory. Seven of the persons concerned were placed under the supervision of local health authorities as cases of typhoid fever; release specimens were required. It is interesting to note that one lady whose agglutination titer was only 1 :40, submitted several fecal specimens which contained typhoid organisms. The seven patients, discovered as the result of routine blood tests, and an eighth patient on whom the attending physician received a positive agglutination report and also several reports of positive stool cultures, brought the total number of cases to forty-four. One secondary case developed subsequent to the forty-four original cases, making a total of forty-five who suffered in the outbreak. The clinical diagnosis in the secondary case was confirmed by positive agglutination and feces cultures carried out at the State Hygienic Laboratory. Two fatalities are known to have resulted from the epidemic.

Time of Onset of Illness

Nearly all of the patients developed initial symptoms of typhoid fever during November, 1938. Twenty-two patients became ill during the week ending Saturday, November 12, and sixteen patients during the week ending Saturday, November 19. Several patients were sick toward the end of the week ending November 5. Symptoms of onset in the single secondary case were early in December.

Age and Sex Distribution

With few exceptions the patients comprising the epidemic were women. Ages varied for the most part from twenty to fifty-nine years. One of the patients was under twenty, several in the decades sixty to sixty-nine and seventy to seventy-nine.

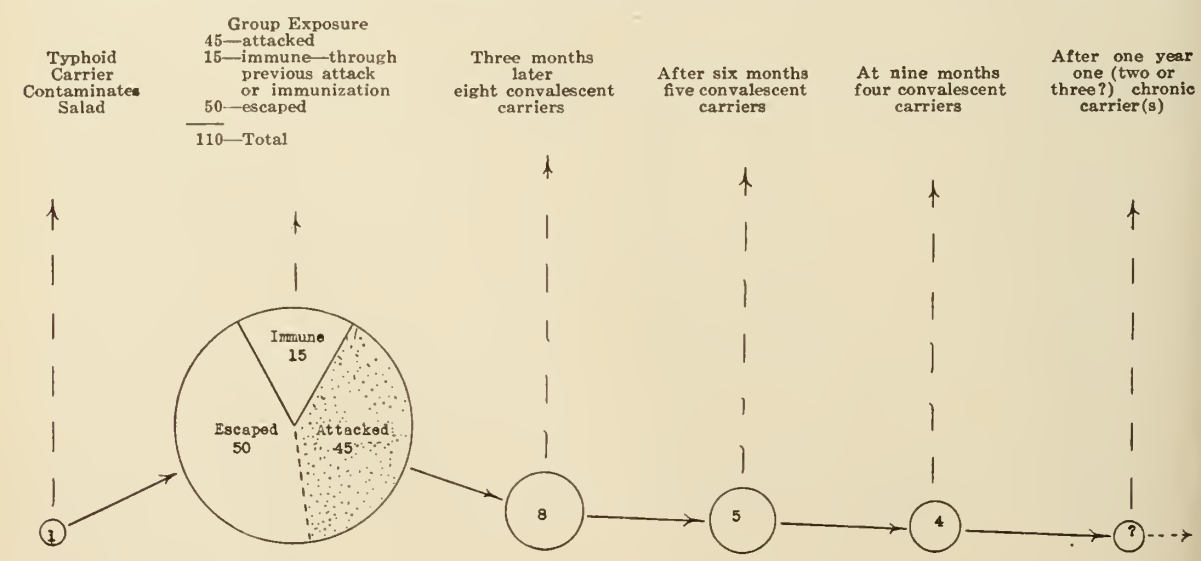
Demonstration of Source of Infection

Epidemiologic investigation indicated that Mrs. Y, the elderly woman who prepared potatoes for the salad which was served on October 24, would prove to be a typhoid carrier. This woman gave a history of having had typhoid fever in 1934; her granddaughter acquired the disease in January, 1936, while living in the same home. Mrs. Y was asked to submit specimens of the bodily discharges; the specimens were prepared and forwarded to the State Hygienic Laboratory. On November 29, 1938, a report from the laboratory, received by the city physician, stated that the typhoid organism had been isolated from a fecal specimen. The laboratory subsequently reported the finding of B. typhosus in four more specimens of feces from the same person. The laboratory findings leave little doubt regarding the source of infection of this food-borne epidemic of typhoid fever.

Fig. 1

CARRIER—PATIENT—CARRIER CYCLE OF THE TYPHOID BACILLUS

Schematic presentation based on the study of a food-borne epidemic of typhoid fever (occurrence in Iowa, November, 1938), and on laboratory reports of release specimens during the months following convalescence.



Control Measures and Discussion

Control measures as instituted during the epidemic are listed as follows:

1. Isolation precautions were exercised as soon as possible after the recognition of cases. Public health and visiting nurses made home visits and assisted with instructions to safeguard contacts.

2. Discovery was made of the typhoid carrier who was the probable source of infection; this person was placed under supervision.

3. Contacts were immunized with typhoid vaccine.

4. Blood specimens, taken from all persons subject to possible exposure, led to the recognition of seven additional cases of typhoid fever that might otherwise have been overlooked.

5. Release specimens.

The importance of examining specimens of the bodily discharges before release of a typhoid patient, is emphasized by laboratory findings on fecal specimens taken from the patients who participated in this typhoid outbreak during the months following their convalescense. (See the accompanying diagram, Fig. 1.) Stool specimens totaling 252, and 171 urine specimens, were forwarded to the State Hygienic Laboratory from forty-three patients. Eight patients were found to be discharging typhoid organisms three months after onset of illness; five individuals harbored typhoid bacilli in the bowel discharges after six months, and four persons eight and one-half months following the illness (Fig. 1). Typhoid fever patients who continue to harbor the bacillus during the months following recovery are classed as convalescent carriers. The patient who discharges organisms a year after recovery is regarded as a chronic typhoid carrier; the focus of infection, as a rule, is in the gallbladder.

6. Further laboratory tests.

Under direction of the city physician, arrangements will continue to be carried out during the coming months whereby further fecal specimens will be prepared for laboratory analysis. A final survey conducted a year following the outbreak will be advisable, to determine whether one or possibly two or three persons were destined to develop a chronic typhoid carrier state following the attack of typhoid fever which occurred in November, 1938.

Summary

Report is made of a food-borne epidemic of typhoid fever, including discussion of the source of infection and laboratory findings during the months following convalescence.

Acknowledgment

Acknowledgment is made to V. H. Hasek, M.D., city physician of Cedar Rapids, to attending physicians, and public health and visiting nurses, for services extended during investigation of the epidemic and to laboratory workers at the State Hygienic Laboratory, whose painstaking efforts showed the presence or absence of typhoid organisms in the bodily discharges of the patients and the carrier.

PWA COMPENSATION CLAIMS*

In the past a great deal of difficulty has been experienced in making claims for medical services rendered to PWA workers for accidental injuries received while men were at work on a project. Originally there were nine or ten blanks to be filled out, regardless of the amount of the injury or size of the claim. Recently the procedure was simplified, and letters are being directed to all physicians eligible to do this type of work explaining the procedure. It is urged that each physician keep his copy of this letter so that he may be guided by it and subsequent difficulties may be prevented. The procedure has been checked and found to be no more complicated than that for any type of accident case which is now reported to an insurance company.

Due to the fact that this is a governmental agency, and work must be authorized before being paid for, the physician must insist that he is immediately given blanks by the individual in charge of the project. On the reverse of this authorization is the preliminary report which should be filed out and mailed at once to the office in Des Moines. The patient is then cared for, and at the conclusion of treatment the itemized bill is made out, certified to, and mailed in. Any duplicates which are necessary are now prepared by the clerical force in the Des Moines office and are not the responsibility of the physician.

The officer in charge of the compensation work has instructed the person in charge of the project to rotate the work, so that the physicians desiring to do this type of work will have an equal amount in each county. Except in the case of injury requiring the services of a specialist, the physicians are supposed to be called in turn. Each month the reports in the state office will be checked by a representative of the medical society to insure that this rule is being observed.

*From the Medical Economics Committee.

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—MRS. EDWARD A. HANSKE, Bellevue
President Elect—MRS. ELBERT T. WARREN, Stuart
Secretary—MRS. WALTER J. CONNELL, Dubuque
Treasurer—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

MENTAL HYGIENE—SUBJECT FOR STUDY

Last year the Program Committee of the Woman's Auxiliary to the Iowa State Medical Society presented a study outline on Maternal, Child and Adolescent Health. This year we are supplementing that outline with one on Mental Hygiene.

Mental hygiene is the science of mental health. Dr. Karl A. Menninger says, "Mental health is the adjustment of human beings to the world and each other with a maximum of effectiveness and happiness." Mental well being is not only efficiency and the art of obeying the rules of the game cheerfully, but also the ability to maintain an even temper, an alert mind, a socially considerate behavior and a happy disposition.

Never in the history of the world has mental hygiene been more important than today. In the United States alone there are nearly two million more boys and girls between sixteen and twenty years of age than there were in 1929. Statistics show that the peak of this youth wave will be reached within the next five years, and that by 1961 it will be back to the 1929 level again. The totalitarian countries have shown that they can deliberately build certain kinds of attitudes in their entire young generation. We can, at least, teach our youth what good human relationships are and how to build them. Mental hygiene will do this.

Two lists of mental hygiene books, one from the State Medical Library and one from the State Traveling Library are given. These books will be sent to you upon request; the only charge will be for postage. A study outline will be printed for you early in the fall. In the meantime if you have any suggestions or questions, please write Mrs. Russell C. Doolittle, Woodland Avenue and Twenty-eighth Street, Des Moines, Iowa.

STATE TRAVELING LIBRARY LIST

Mental Hygiene in the Community, Bassett, 1936.

The Mind that Found Itself, Beers, 1923.

The Normal Mind, Burnham, 1924.

Psycho-analysis for Normal People, Coster, 1928.

Introduction to Mental Hygiene, Groves and Blanchard, 1930.

Psychology of the Adolescent, Hollingworth, 1928.

Outwitting our Nerves, Jackson and Salisbury, 1932.

Keeping Mentally Fit, Jastrow, 1932.

Mental Hygiene for Effective Living, 1934.

The Human Mind, Menninger, 1930.

Keeping a Sound Mind, Morgan, 1934.

Streamline Your Mind, Mursell, 1936.

Psychiatry and Mental Health, Oliver, 1932.

The Child: His Nature and His Needs, O'Shea, 1924.

Let Me Think, Overstreet, 1939.

The Mind at Mischief, Sadler, 1929.

Growing into Life: A Magna Charta of Youth, Seabury, 1936.

How to Worry Successfully, Seabury, 1936.

Everday Problems of the Everday Child, Thom, 1927.

Exploring your Mind, Wiggam, 1928.

STATE MEDICAL LIBRARY LIST

Practical Examination of Personality and Behavior Disorders, Appel and Strecker, 1936.

Diagnosis and Treatment of Behavior Problem Children, Baker and Traphagen, 1935.

The Psychology of the Preschool Child, Baldwin, 1925.

Problem Children, Bentley, 1936.

Speech Training for Children, Blanton, 1919.

Mental Aspects of Stammering, Bluemel, 1930.

Stammering and Allied Disorders, Bluemel, 1935.

Nerve Control and How to Gain It, Bruce, 1918.

The Nervous Child, Cameron, 1919.

Repressed Emotions, Coriat, 1920.

The Nervous Patient, Emerson, 1935.

The Common Neuroses, English and Pearson, 1937.

The Problem of the Nervous Child, Evans, 1920.

Speech and Hearing, Fletcher, 1929.

Psycho-analytic Study of the Family, Flugel, 1931.

School Training of Gifted Children, Goddard, 1928.

Cause and Cure of Speech Disorders, Green, 1927.

The Way of All Women, Harding, 1934.

Gifted Children, Hollingworth, 1929.

The Neurotic Personality of Our Time, Horney, 1937.

Child Psychiatry, Kanner, 1935.

Growing Superior Children, Kugelmass, 1936.

The Child's Unconscious Mind, Lay, 1919.

The Psychology of the Unadjusted School Child, Morgan, 1925.

The American Mind in Action, O'Higgins, 1924.

Reading, Writing and Speech Problems in Children, Orton, 1937.

Lefthandedness, Parson, 1924.

Big Problems on Little Shoulders, Renz and Renz, 1935.

The Mind in the Making, Robinson, 1921.

The Common Neuroses, Ross, 1937.

The Physiology of Faith and Fear, or the Mind in Health and Disease, Sadler, 1922.

The Adolescent, Schwab and Veeder, 1929.

A Manual of Exercises for the Correction of Speech Disorders, Scripture, 1919.

Unmasking our Minds, Seabury, 1924.

Speech in Childhood, Seth and Guthrie, 1935.

The Psychology of Behavior, Severn, 1918.

Conditions of Nervous Anxiety and Their Treatment, Stekel, 1923.

The Psychology of Speech, Stinchfield, 1928.

Mental Measurement of Preschool Children, Stutsman, 1931.

The New Psychology, Tansley, 1920.

The Measurement of Intelligence, Terman, 1916.

Speech Pathology, Travis, 1931.

Correction of Defective Speech, Twitmyer, 1932.

Personality Maladjustments and Mental Hygiene, Wallin, 1935.

The Inferiority Feeling, Walsh, 1929.

Safeguarding Children's Nerves, Walsh and Foote, 1924.

The Neuroses, Wechsler, 1929.

Behavior of Young Children of the Same Family, Weill, 1928.

Handedness: Right and Left, Wile, 1934.

Adolescence, Williams, 1930.

COMMITTEE APPOINTMENTS

Mrs. E. A. Hanske of Bellevue, president of the Woman's Auxiliary to the Iowa State Medical Society, has announced her committee appointments for the ensuing year. Members are requested to save the following official list for future reference.

Organization

Mrs. W. R. Hornaday ..... Des Moines
Mrs. F. W. Mulsow ..... Cedar Rapids
Mrs. E. D. Miller ..... Wellman
Mrs. C. B. Hickenlooper ..... Winterset
Mrs. E. T. Warren ..... Stuart

Program

Mrs. Russell C. Doolittle ..... Des Moines
Mrs. Henry G. Decker ..... Des Moines
Mrs. A. E. Merkel ..... Ankeny
Mrs. T. B. Throckmorton ..... Des Moines
Mrs. Dwight C. Wirtz ..... Des Moines

Public Relations

Mrs. W. A. Seidler ..... Jamaica
Mrs. P. W. Beckman ..... Perry
Mrs. Daniel J. Glomset ..... Des Moines
Mrs. Keith Chapler ..... Dexter
Mrs. W. R. Brock ..... Sheldon

Legislation

Mrs. Charles Ryan ..... Des Moines
Mrs. Harold W. Morgan ..... Mason City
Mrs. Walter Hombach ..... Council Bluffs
Mrs. George C. Ryan ..... Maquoketa

Revisions

Mrs. J. C. Donahue ..... Centerville
Mrs. J. H. Chittum ..... Wapello
Mrs. D. F. Ward ..... Dubuque

Press and Publicity

Mrs. Fred Moore ..... Des Moines
Mrs. James A. Downing ..... Des Moines
Mrs. Isaac Sternhill ..... Council Bluffs

Printing

Mrs. W. C. Reiley ..... Red Oak
Mrs. E. C. Montgomery ..... Atlantic
Mrs. George Egermayer ..... Elliott

Hygeia

Mrs. F. P. Winkler ..... Sibley
Mrs. L. E. Cooley ..... Dubuque
Mrs. Walter C. Norem ..... Muscatine
Mrs. Cecil C. Jones ..... Des Moines
Mrs. A. Q. Johnson ..... Sioux City

Finance

Mrs. M. C. Hennessy ..... Council Bluffs
Mrs. S. E. Lincoln ..... Des Moines
Mrs. C. A. Boice ..... Washington
Mrs. J. C. Decker ..... Sioux City
Mrs. W. R. Hornaday ..... Des Moines

Parliamentarian—Mrs. R. W. Perkins ..... Sioux City
Historian—Mrs. E. L. Bower ..... Guthrie Center

Advisory Committee from the State Society

Dr. C. B. Hickenlooper ..... Winterset
Dr. John G. DeBey ..... Orange City
Dr. James C. Hill ..... Newton
Dr. F. K. Burnett ..... Clarinda

SOCIETY PROCEEDINGS

Bremer County

The combined monthly meeting of the Bremer County Medical Society and the staff of Mercy Hospital, was held Wednesday, July 26, at the Fortner Hotel in Waverly. Following the six-thirty dinner, Stuart C. Cullen, M.D., of the State University of Iowa, College of Medicine, Iowa City, addressed the group on Newer Anesthetic Agents and Technics.

P. K. Graening, M.D.

Calhoun County

John T. Strawn, M.D., of Des Moines, was guest speaker for the Calhoun County Medical Society, at a meeting held in Rockwell City, Tuesday, July 18, taking for his subject, Gastric Hemorrhages. Dr. J. J. Weyer of Lohrville was elected secretary of the society to fill the vacancy created when Dr. H. H. Harris of Rockwell City moved to Battle Creek.

Dallas-Guthrie Society

The following program was presented for the regular meeting of the Dallas-Guthrie Medical Society, held in Woodward, Thursday, July 27: The Use of Pins and Skeletal Traction in Fractures, Dwight C. Wirtz, M.D., of Des Moines; and Mental Growth of Children in Relations and Differentials of the Environment, Harold M. Skeels, Ph.D., of Iowa City.

S. J. Brown, M.D., Secretary.

Davis County

Members of the Davis County Medical Society were hosts to physicians, their families and guests, of Appanoose, Wapello and Van Buren counties, for a picnic meeting held at the Bloomfield County Club, Monday, July 10. Dr. Felix A. Hennessy of Calmar, president of the Iowa State Medical Society, was a guest of the group, and presented an address on Socialized Medicine.

Linn County

The Linn County Medical Society will open its fall programs with a meeting on Thursday, September 7, at which time it will entertain Dr. Thomas A. Parran, Surgeon-General of the United States Public Health Service, Washington, D. C., as its guest. Physicians from neighboring counties and cities are cordially invited to be present.

T. F. Hersch, M.D., Chairman
Program Committee.

Wayne County

The Wayne County Medical Society met for a picnic dinner at the club house in Weldon Park, Lineville, Monday, July 10. The scientific program was furnished by B. B. Parker, M.D., of Centerville, with a paper on Appendicitis.

Upper Des Moines Medical Society

The summer meeting of the Upper Des Moines Medical Society will be held Thursday, August 17, at The Inn on Lake Okoboji, with the following program for the morning session: Diagnosis of Foreign Bodies in the Lung (illustrated with moving pictures), James A. Downing, M.D., of Des Moines; The Combined Ligation and Injection Treatment of Varicose Veins, Julian M. Bruner, M.D., of Des Moines; Coma, Its Diagnosis and Treatment, John W. Caldwell, M.D., of Des Moines; and the General Management of Fractures, Lewis M. Overton, M.D., of Des Moines.

The afternoon program consists of the following addresses: Malignancy in the Large Bowel, Claude F. Dixon, M.D., of Rochester, Minnesota; Practical Management of Biliary Tract Diseases, R. Russell Best, M.D., of Omaha, Nebraska; Urologic Emergencies, Lawrence E. Pierson, M.D., of Sioux City; and The More Common Skin Diseases, Their Diagnosis and Treatment (with lantern slide demonstration), Samuel E. Sweitzer, M.D., of Minneapolis.

Dr. Frank P. Winkler of Sibley, councilor for the Third District, will preside as toastmaster during the six-thirty dinner and program. The full day's session will be brought to a close with an address by Dr. Felix A. Hennessy of Calmar, president of the Iowa State Medical Society, on Medical Economics.

O. H. Miller, M.D., Secretary.

PERSONAL MENTION

Dr. Fred M. Smith, head of the department of internal medicine, State University of Iowa, College of Medicine, spoke at the Annual Alumni Clinic of Rush Medical College, Chicago, on Tuesday, June 13. His subject was "Clinical Manifestations of Coronary Artery Disease."

Dr. Charles W. Ihle, Sr., of Cleghorn, announces the association of his son, Dr. Charles W. Ihle, Jr., with him in the practice of medicine and pediatrics. Dr. Ihle, Jr., was graduated in 1934 from the University of Nebraska, College of Medicine, Omaha, and interned in the Mount Vernon Hospital in New York. He has been associated with the Children's Hospital in Los Angeles, California, and has just completed a year as resident physician in the Children's Hospital, Pittsburgh, Pennsylvania.

Dr. Forrest J. Austin has been appointed medical director of the district health unit for Webster, Calhoun and Boone counties, with headquarters in Fort Dodge, according to a recent announcement from the State Department of Health in Des Moines. Dr. Austin has been engaged in this type of work for some time, and comes to Fort Dodge direct from Ann Arbor, Michigan, where he has just completed a year's postgraduate study in public health and hygiene.

Dr. Darrell L. Bell of Harvey, Illinois, has arrived in Oelwein, where he will take over the practice and office of the late Dr. George N. Wassom. Dr. Bell was graduated from Rush Medical College, University of Chicago, in 1937, and has been associated with the Michael Reese Hospital and the Cook County Graduate School of Medicine in Chicago.

Dr. James P. Sharon of the State Department of Health, Des Moines, addressed the Anamosa Rotary Club, Thursday, July 13, on "The Control of Venereal Diseases in Iowa."

Dr. Thomas B. Lacey of Glenwood has been appointed by the Iowa State Board of Control, as superintendent of the Iowa Institution for Feebleminded Children, for a term of four years, beginning July 1, 1939. Dr. Lacey has been assistant superintendent for the past twenty years.

Dr. Clifford D. Winder, who has practiced for the past five years in Harlan, is leaving that locality and moving to Waterloo. His practice will be taken over by Dr. Alfred Sorensen of Castle Dale, Utah. Dr. Sorensen was graduated in 1928 from the State University of Iowa, College of Medicine, and completed his interneship at the Salt Lake City Hospital in Salt Lake City. He has been practicing eight years in Castle Dale, Utah.

Dr. O. Donald Thatcher is entering the practice of medicine in Fort Dodge, where he will be associated with his brother, Dr. Wilbur C. Thatcher. Dr. Donald Thatcher was graduated in 1937 from the State University of Iowa, College of Medicine, Iowa City, and interned at the University Hospitals.

Dr. Paul Stephen, for the past three years connected with the State Department of Health in Des Moines as assistant director of the Division of Preventable Diseases, has moved to Manchester, where he will enter the private practice of medicine.

Dr. Rieber C. Hoyde, who was graduated in 1938 from Northwestern University Medical School, Chicago, has arrived in Davenport, where he will be associated in practice with Dr. Louis H. Kornder. Dr. Hoyde interned at St. Francis Hospital in Evanston, Illinois.

Dr. Howard Grove of Marshalltown has been appointed on the medical staff of the Iowa Institution for Feebleminded Children at Glenwood. He was graduated in 1938 from the State University of Iowa, College of Medicine, Iowa City, and completed his interneship at The French Hospital in San Francisco, California.

Dr. William M. Hogle of Keokuk was the speaker of the evening at a meeting of the Keokuk Business and Professional Women's Club, Tuesday, July 18. Dr. Hogle's address was entitled "Carcinoma."

Dr. James P. Hahn, after eight years of practice in Sioux City, has moved to Pierson, where he will continue in the general practice of medicine and surgery.

Dr. Elwyn G. Rawson, who has practiced in Anamosa for the past nineteen years, was appointed staff physician for the men's reformatory, to fill the vacancy created by the resignation of Dr. H. F. Dolan from the position.

Dr. Andrew V. Grinley is locating in Rockwell City, where he will be associated with Dr. W. W. Stevenson in the practice of medicine. He was graduated in 1937 from Rush Medical College, University of Chicago, and served his interneship at Ancker Hospital in St. Paul, Minnesota.

Dr. Regnar M. Sorensen has been added to the staff of the State Department of Health in Des Moines. Dr. Sorensen has been engaged in public health work for the past few years, and has taken special postgraduate courses in this field at the University of Minnesota Graduate School of Medicine in Minneapolis, and Johns Hopkins University School of Medicine in Baltimore.

Dr. C. Ronald Roberts plans to open offices in Dysart during the first week in August. He was graduated in 1938 from the State University of Iowa, College of Medicine, Iowa City, and completed his year's interneship at St. Joseph's Hospital in South Bend, Indiana.

Dr. Walter L. Byers of Salt Lake City, Utah, is to be associated in the practice of medicine and surgery with Dr. F. H. Rodemeyer in Sheffield. Dr. Byers was graduated from the State University of Iowa, College of Medicine, Iowa City, in 1938, and since that time has been connected with St. Mark's Hospital in Salt Lake City, Utah.

Dr. John C. Parsons of Des Moines was guest speaker of the evening at the dinner meeting of the Des Moines Business and Professional Women's Club, held in Des Moines, Monday, July 10. His subject was "Tuberculosis."

Dr. Martin Van Patten, who was graduated in 1938 from the State University of Iowa, College of Medicine, Iowa City, and who interned at St. Luke's Hospital in Duluth, Minnesota, will be associated with Dr. E. F. Beeh in the practice of medicine and surgery in Fort Dodge.

Dr. Emil A. Fullgrabe has entered an association with Dr. L. E. Hooper in Indianola. He was graduated in 1938 from Loyola University School of Medicine, Chicago, and interned at Mercy Hospital in Des Moines.

Dr. Robert F. Hansen has opened offices in Forest City, where he will enter the private practice of medicine. After his graduation from the State University of Iowa, College of Medicine, Iowa City, in 1934, Dr. Hansen spent two years as an interne in the University Hospitals, and an additional year at the University of Virginia in Charlottesville. Upon his completion of a year's special postgraduate study in public health at Johns Hopkins University School of Medicine, Baltimore, he was appointed director of the Division of Venereal Disease Control, State Department of Health, Des Moines, and he comes to Forest City directly from Des Moines.

Dr. Fred L. Blair of Lytton announces the association of his son, Dr. Fred L. Blair, Jr., with him in the practice of medicine. Dr. Blair, Jr., was graduated in 1938 from the State University of Iowa, College of Medicine, Iowa City, and completed his interneship at the University Hospitals.

Dr. Francis D. Burdick will be associated in the practice of medicine with Drs. Arnold O. Wirsig and J. F. Aldrich in Shenandoah. Dr. Burdick was graduated in 1938 from the State University of Iowa, College of Medicine, and interned at the Iowa Methodist Hospital in Des Moines.

Dr. Robert L. Fenton, who has practiced for the past five years at Baraboo, Wisconsin, is returning to Iowa, where he will open offices in Centerville. Dr. Fenton was graduated from the State University of Iowa, College of Medicine, in 1928, and practiced in Des Moines, prior to his removal to Wisconsin.

MARRIAGES

The wedding of Miss Cecelia Maloney of Chicago and Dr. Matthew G. Sanders of Fort Dodge took place Saturday, June 24, at high noon in St. Ignatius Church in Chicago. After the ceremony the young couple left on a honeymoon trip to Bermuda. They will return to Fort Dodge where Dr. Sanders has been engaged in the practice of medicine for three years.

Miss Helen Hackett of Struthers, Ohio, and Dr. Charles W. Ihle, Jr., of Cleghorn, were married Saturday, July 1, at the home of the bride's uncle and aunt, Mr. and Mrs. W. B. Carson of Pittsburgh, Pennsylvania. The couple took a wedding trip through the west, after which they returned to Cleghorn, where Dr. Ihle is entering the practice of medicine in association with his father, Dr. Charles W. Ihle, Sr.

DEATH NOTICES

Cole, Adalbert Jerome, of Clear Lake, aged eighty-six, died July 17, after an illness of two weeks. He was graduated in 1883 from Rush Medical College, University of Chicago, and at the time of his death was a Life Member of the Cerro Gordo County and Iowa State Medical Societies.

Hill, Chalmers Alexander, of Council Bluffs, aged sixty, died July 9, as the result of a paralytic stroke which occurred six weeks previously. He was graduated in 1907 from Northwestern University Medical School, Chicago, and at the time of his death was a member of the Pottawattamie County Medical Society.

Porath, William Charles, of Storm Lake, aged sixty-six, died suddenly July 18, following a heart attack. He was graduated in 1902 from The Hahnemann Medical College and Hospital, Chicago, and at the time of his death was a member of the Buena Vista County Medical Society.

Ristine, James Oscar, of Maquoketa, aged seventy-four, died July 14 at St. Luke's Hospital in Davenport, where he had been a patient for several weeks. He was graduated in 1896 from the State University of Iowa, College of Medicine, Iowa City, and at the time of his death was a member of the Jackson County Medical Society.

Smouse, David Wilson, formerly of Des Moines, aged eighty-five, died at his home in Los Angeles, California, July 2. He was graduated in 1876 from the University of Maryland, School of Medicine and College of Physicians and Surgeons, Baltimore, and at the time of his death was a Life Member of the Polk County and Iowa State Medical Societies.

Weber, Jacob Siewert, of Davenport, aged sixty-two, died suddenly June 2 after a heart attack. He was graduated in 1901 from Rush Medical College, University of Chicago, and at the time of his death was a member of the Scott County Medical Society.

Welpton, Hugh Gilmer, of Des Moines, aged sixty-eight, died July 3 at Baylor University Hospital in Dallas, Texas, where he had been a patient since March 3. He was graduated in 1897 from Drake University College of Medicine, Des Moines, and at the time of his death was a Life Member of the Polk County and Iowa State Medical Societies.

History of Medicine in Iowa

Edited by the Historical Committee

Dr. Frank M. Fuller, Keokuk
Dr. John T. McClintock, Iowa City
Dr. R. T. Lenaghan, Clinton
Dr. Tom B. Throckmorton, Des Moines
Dr. Walter L. Bierring, Des Moines
Dr. William Jepson, Sioux City

Boone County Honors Six Physicians

The Boone County Medical Society recently arranged a dinner to honor six members of the organization who had been engaged forty years or more in the practice of medicine. The meeting was held Tuesday, May 23, at Dr. T. C. Cooper's cabin at the east entrance to The Ledges, near Boone, and the physicians so honored were Dr. John O. Cook of Madrid, Dr. Albert B. Deering of Boone, Dr. James O. Ganoe of Ogden, Dr. Emil G. Grove of Boone, Dr. Mark C. Jones of Boone, and Dr. Nelson M. Whitehill of Boone.

Dr. Oliver J. Fay of Des Moines, was invited to pay a tribute to "The Country Doctor." His address and short biographic notes of the physicians follow.

Dr. John Oliver Cook of Madrid, was born January 11, 1875. He was graduated in 1897 from the University of Virginia, Department of Medicine, Charlottesville, Virginia. Immediately after his graduation he practiced in New York, two years in Savannah, Georgia, and various parts of the west, locating in Madrid in 1919, after his return from overseas' army service in the World War. He has one son, John Oliver Cook, Jr. Dr. Cook's interest in community work is shown by the fact that he has served Madrid as its mayor for two terms.

Dr. Albert B. Deering of Boone, son of Dr. A. A. and Martha Clift Deering, was born July 27, 1874, in Moingona, Iowa. He was graduated from Boone High School, spent two years at Iowa State College, and one year at State University of Iowa. He attended Northwestern University Medical School for three years, and received his doctor of medicine degree from that institution in 1898. Dr. Deering served in the Spanish-American and World Wars, attaining the rank of Major in the Medical Officers Reserve Corps. He is a member of the American College of Surgeons.

Dr. James O. Ganoe of Ogden, is a native of Illinois, and attended school at Valparaiso, Indiana for one year, and Illinois Wesleyan University at Bloomington for two years. He was graduated from the Omaha Medical College in 1897. Immediately thereafter he entered practice at Pilot Mound, and continued for eight years. Following special postgraduate study at Rush Medical College, University of Chicago, he returned to Iowa, and located in Ogden, where he is still in practice.

Dr. Emil G. Grove, son of A. G. and Christina Grove, was born at Fairfield, November 26, 1872. He was graduated in 1896 from the Keokuk Medical College, and from the La Grange School of Ophthalmology in 1898. Postgraduate studies were pursued in 1904 and 1906 at the Chicago Eye, Ear, Nose and Throat College, in 1908 at the Chicago Polyclinic Hospital, and at The Mayo Clinic in Rochester, Minnesota. Dr. Grove served in the World War from 1916 to 1919 with the rank of Captain. He was married to Edna M. Glaze in 1898, and they have one son, Emil G. Grove, Jr., born in 1904. He left Fairfield in 1924 and located in Boone, where he has continued in the general practice of medicine, giving special attention to diseases of the eye, ear, nose and throat.

Dr. Mark C. Jones of Boone, was born September 24, 1871, in McLean county, Illinois. He attended the Illinois Normal University and Eastman's National Business College at Poughkeepsie, New York, and returned home to work in the Third National Bank at Bloomington. He was graduated in 1898 from Marion Sims College of

Medicine in St. Louis. On September 21, 1898, he was married to Harriet White, who died April 20, 1939. His early practice was at Table Grove, Illinois, in Miami county, Indiana, and McClean, Illinois, and he located in Boone in February, 1911, where he is still in practice. Dr. Jones was in the army during the World War, and spent one year overseas.

Dr. Nelson M. Whitehill of Boone, was born October 13, 1870. He was graduated from Grinnell College, and Rush Medical College, University of Chicago, in 1897. For eight years he practiced at Garwin, and moved to Boone in 1905, where he has continued to the present time. He served as Captain in the Medical Officers Reserve Corps overseas during the World War. Dr. Whitehill is active in civil affairs, a past president of the Boone Chamber of Commerce and Rotary Club, and a past master of the Masonic Order in Boone.

A TRIBUTE TO "THE COUNTRY DOCTOR"

Dr. Whitaker has put me in an uncomfortable position here tonight in that he has asked me to toast "The Country Doctor." It is, to say the least, inconsiderate of him; he should have considered that it is always embarrassing for a man to have to sing his own praises, even as one of a group, and I feel that I am just as much entitled to call myself a country doctor as is any one of the men whom we have come here to honor tonight. After all, that title is dependent not upon whether the community in which a doctor lives was blessed with paving a few years earlier or a few years later than some other community; it takes more than that to make a country doctor out of a graduate in medicine. In Iowa, at least, a man is entitled to the honorary degree of country doctor when he has served his community in good weather and in bad, regardless of whether it has or has not good paving and all-weather roads. I insist upon my right to be classed as a country doctor—that is an honor of which I am jealous—but to avoid embarrassing entanglements, a major problem of the day, I'll take refuge in the fact that my work has necessarily been confined to a somewhat narrower field than has that of your honored guests, and that they have had a few—but only a few—more years of service than I. To make the case quite clear, I'll draw the line at forty years, and admit that no special honor should be done the country doctor until he has seen forty years of service—until he has forty service stripes.

There is a great deal to be said for the physician who through four decades has served his fellow man through spring mud, in summer's dust and torrid heat, through fall rains, and winter blizzards; who has managed to keep abreast of medical advances, not in the relatively narrow confines of one specialty, but in that all embracing field that we term general practice; who has faced those crucial issues which are an inevitable part of his professional work, without the benefit of laboratory and hospital facilities and of trained assistance, but alone; and has yet managed to win through in a surprisingly large percentage of cases. Only a fellow physician is in a position to realize just how much credit is due these men.

There is so much to be said for a field of practice which makes those who follow it good neighbors in the fullest sense of the word. Such members are an intimate part of each family circle they serve; having ushered a new life into the world, they guard it through the period of development; when death comes to the family circle, as inevitably it must sometimes come however great the skill, however faithful the service of its physician, it is again the doctor who stands by, who having given of his best talents professionally, gives the last full measure of service in giving of himself. Such close personal association is something of which the specialist necessarily knows little; for him, it is the exception, not the rule. In a general way, his patients must for the most part remain clinical cases; when he has given the full measure of his professional skill, he has fulfilled his obligation, he has done his part. To the country doctor, patients are more than cases, more than people, they are his neighbors and his friends. It is not enough that he should minister to them as a physician, not in a specialized field but in the broad field of general practice; he is also required to know and to help them carry their personal burdens—physical, financial, emotional—and no one who has not been required to meet this threefold challenge can properly evaluate what it means, what demands it makes on physical strength, on professional judgment, on emotional reserves.

In recent years, we have heard much of the courage, the hardihood, the self-sacrifice of the pioneer physician, who stored what little equipment he had in his saddle bags, or in later years in his gig, and went out over impassable roads to bring comfort and succor to the pioneers of our country. I grant his case; I join with his most ardent admirers in doffing my hat to his memory. However, I am not willing to grant that he has—to use a colloquialism—anything on the country doctors of our own day. True, his modern counterpart has spent more years in study, is better

prepared to face emergencies because of this training and because of the equipment he has secured for himself: he makes use of an automobile where his early predecessors made use of a horse, although he may think longingly of the latter when he climbs out of his car to dig himself out of a mud-hole or a snow bank. Even so, if the hardships of travel are in some measure mitigated today, we would point out that those whom the country doctor serves today no longer dwell in log cabins with earthen or puncheon floors and with mud calking to keep out the worst of the winter winds. Compared with the lives of many of those he serves, the physician's life is still a hard life with no hour which he may truly call his own, with much of physical and spiritual strain, and with relatively inadequate compensation; but in spite of this, the country doctor makes time to keep pace with the onward march of medicine, to be a real person, a real neighbor, a real citizen, and he does his part toward promoting the solidarity of the profession which has the honor of claiming him.

To those who have seen forty years of such service, who have watched the roads come out of the mud that had often threatened to engulf them, who have been an active part of medical life during a period which has seen greater advances than any like period in the past, we would pay homage. They have done yeoman service; they have won lasting regard, not only from us, but from the respective communities which they have served. Tonight we offer our respects, our congratulations, our sincere well-wishes to active veterans, to these men whose years of experience have augmented, not depleted, their value to their communities and to us, their co-workers. May they long continue to give their communities professional service, and their colleagues and medical societies their seasoned counsel and active cooperation.

SPEAKERS BUREAU RADIO SCHEDULE

WOI—Wednesdays at 2:15 p. m.

WSUI—Tuesdays at 7:45 p. m.

Aug. 8	Asthma, John C. Schrader, M.D.
Aug. 15	Alcohol and Auto Accidents, Harold W. Morgan, M.D.
Aug. 22	Accidents in the Home, Charles S. Fail, M.D.
Aug. 29	Is Your Child Ready for School? Arnold M. Smythe, M.D.
Sept. 5	Physiology of the Eye, John M. Matheson. M.D.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Council, July 9, 1939

The Council of the Iowa State Medical Society met at the Hotel Fort Des Moines in Des Moines, Sunday, July 9. Those in attendance were: Drs. F. P. Winkler, chairman, L. L. Carr, C. H. Cretzmeyer, J. E. Reeder, C. W. Ellyson, H. A. Householder, C. A. Boice, H. A. Spilman, J. G. Macrae, M. C. Hennessy, all of the Council; and E. D. Plass, R. L. Parker, F. A. Hennessy, and W. L. Bierring.

Business transacted was as follows: 1. Dr. J. B. Priestley of Des Moines was appointed chairman of the Speakers Bureau Committee. 2. Dr. Earl B. Bush of Ames was selected as the Council Member of the Speakers Bureau Committee. 3. The remainder of the committee consists of Dr. James Dunn of Davenport, Dr. W. R. Brock of Sheldon, Dr. S. D. Maiden of Council Bluffs, and Dr. T. F. Hersch of Cedar Rapids. 4. Council voted approval of the proposed cooperative postgraduate obstetric service to be carried on at Broadlawns General Hospital in Des Moines by the State Department of Health and the State University of Iowa, College of Medicine. 5. The Executive Cancer Committee was appointed with Dr. M. C. Hennessy of Council Bluffs, chairman, and Dr. T. A. Burcham of Des Moines, Dr. H. W. Morgan of Mason City, and Dr. W. H. Gibbon of Sioux City, as other members. 6. Drs. Plass, McNamara and Erskine were authorized to continue handling the Cancer Manual responsibilities until pending orders had been filled and the account brought to a close.

The meeting adjourned at one o'clock.

COMING MEETINGS

Because we feel that many of the members of the Iowa State Medical Society may be interested in a number of national and special meetings, we are herewith publishing a calendar of the approaching sessions. More detailed information may be secured from the JOURNAL office.

American Board of Internal Medicine. Written examinations will be held October 16, 1939 (formal application must be received by August 20, 1939); and February 19, 1940 (application must be received before January 1, 1940). Secretary, Dr. William S. Middleton, 1301 University Avenue, Madison, Wisconsin.

The Eighteenth Annual Scientific and Clinical Session of the American Congress of Physical Therapy, September 5 to 8, 1939, Hotel Pennsylvania, New York City. Executive Director, A. R. Hollender, M.D., 30 North Michigan Avenue, Chicago, Illinois.

Third Congress of the Pan-Pacific Surgical Association, September 15 to 28, 1939, Honolulu, Hawaii. Sail from Los Angeles, September 7, or San Francisco, September 8. Address Dr. George W. Swift, 902 Boren Avenue, Seattle, Washington; or Dr. Forrest J. Pinkerton, Young Building, Honolulu, Hawaii.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

PRINCIPLES AND PRACTICE OF OPHTHALMIC SURGERY—By Edmund B. Spaeth, M.D., associate professor of ophthalmology in the Graduate School of Medicine, University of Pennsylvania. Lea and Febiger, Philadelphia, 1939. Price, $10.00.

GONORRHEA IN THE MALE AND FEMALE—By P. S. Pelouze, M.D., assistant professor of urology, University of Pennsylvania. Third edition, thoroughly revised. W. B. Saunders Company, Philadelphia and London, 1939. Price, $6.00.

THE VAGINAL DIAPHRAGM—By Le Mon Clark, M.D., Chicago. Illustrated. The C. V. Mosby Company, St. Louis, 1939. Price, $2.00.

WHAT IT MEANS TO BE A DOCTOR—By Dwight Anderson. Published by the Public Relations Bureau, Medical Society of the State of New York, 2 East 103rd Street, New York, N. Y., 1939. Price, $1.00.

MENSTRUAL DISORDERS, PATHOLOGY, DIAGNOSIS AND TREATMENT—By C. Frederic Fluhmann, M.D., associate professor of obstetrics and gynecology, Stanford University School of Medicine, San Francisco, California. W. B. Saunders Company, Philadelphia and London, 1939. Price, $5.00.

THE GENUINE WORKS OF HIPPOCRATES—Translated from the Greek by Francis Adams, LL.D., Surgeon. The Williams and Wilkins Company, Baltimore, Maryland, 1939. Price, $3.00.

A TEXTBOOK OF CLINICAL NEUROLOGY—By Israel S. Wechsler, M.D., professor of clinical neurology, Columbia University, New York. Fourth edition, revised. W. B. Saunders Company, Philadelphia and London, 1939. Price, $7.00.

CLINICAL PATHOLOGICAL GYNECOLOGY—By J. Thornwell Witherspoon, M.D., formerly associate professor of experimental and pathological gynecology, Indiana University Medical Center. Lea and Febiger, Philadelphia, 1939. Price, $6.50.

LIFE AND LETTERS OF DR. WILLIAM BEAUMONT—By Jesse S. Myer, M.D., late associate in medicine, Washington University, St. Louis. The C. V. Mosby Company, St. Louis, 1939. Price, $5.00.

CANCER HANDBOOK OF THE TUMOR CLINIC, Stanford University School of Medicine. Edited by Eric Liljencrantz, M.D., chief of the Tumor Clinic. Stanford University Press, Stanford University, California, 1939. Price, $3.00.

HEALTH OFFICERS' MANUAL—By J. C. Geiger, M.D., Dr. P.H., director of the Department of Public Health, City and County of San Francisco, California. W. B. Saunders Company, Philadelphia and London, 1939. Price, $1.50.

PERSONAL AND COMMUNITY HEALTH—By C. E. Turner, A.M., Dr. P.H., professor of biology and public health, Massachusetts Institute of Technology. Fifth edition. The C. V. Mosby Company, St. Louis, 1939. Price, $3.00.

BOOK REVIEWS

CANCER

with special reference to Cancer of the Breast.

By R. J. Behan, M.D., co-founder and formerly director of the Cancer Department of the Pittsburgh Skin and Cancer Foundation. The C. V. Mosby Company, St. Louis, 1938. Price, $10.00.

This book was originally written as a treatise on cancer of the breast and it is the best contribution on that particular topic which this reviewer has seen. The subject is thoroughly covered and various methods of diagnosis and treatment are described in detail. An attempt has also been made, with considerable success, to standardize procedures. For example, nine incisions for mammectomy are described, the advantages and disadvantages of each being pointed out. The author advocates only one incision, which is described so simply and accurately, and is so well shown by excellent illustrations, that it alone is well worth a study of the book. Its universal adoption would prevent much of the limitation of motion so often seen following these operations.

The book also discusses many of the general phases of cancer activity. The author describes tests and methods of treatment, which, in some instances, have not been generally accepted. He says in the preface that "the reviewer will probably voice his emphatic disapproval" to this inclusion. This reviewer will do nothing of the kind. On the contrary, it appears obvious that much material of doubtful or negative value must be included in a discussion of any subject of which we have little or no exact knowledge. Had Finlay's theory that yellow fever is carried by mosquitoes been given early publicity, it is evident now that it would not have taken twenty years to demonstrate its truth. Who knows by what a narrow margin some of the originators of the thirty-seven tests for cancer, described by Dr. Behan, may have missed their objective?

As the reader turns the pages of this fascinating book, he finds his thoughts straying to exciting possibilities. He wonders what some clear, logical, mathematical mind might do with the wealth of material in it, and if, somewhere in its pages, hidden from all but the most discerning eye, the answer may lie to the questions of what cancer is, and what is to be done about it. A. W. E.

ANEMIA IN PRACTICE

By William P. Murphy, M.D., associate in medicine, Harvard Medical School. W. B. Saunders Company, Philadelphia and London, 1939. Price, $5.00.

This is one of the most comprehensive, readable and useful books on the subject which the reviewer has seen. The volume is divided into two sections, the first dealing in rather an outline form with the hypochromic and normocytic anemias. These are classified and described, and treatment is outlined with an evaluation of the effectiveness of different forms of iron, with and without the addition of liver substances. The second section contains a comprehensive treatise on pernicious anemia, or Addison's disease. Diagnosis is discussed with a description of the findings in the blood and the symptoms in the gastro-intestinal tract and the neuromuscular systems. The complications which often develop with the anemia are enumerated and their treatment is outlined.

To the practitioner who must handle the cases of anemia from the time of diagnosis through the life

of the patient the most valuable feature of the book is the exhaustive discussion of therapy. Following an historical sketch of the introduction of liver therapy, the author sets forth the different modes of administration as they relate to the efficacy of treatment, the ease of administration and the cost to the patient. From both a scientific and practical standpoint this text will be invaluable to the physician whose practice includes the care of the patient with pernicious anemia. E. E. S.

MEDICINE IN THE OUTPATIENT DEPARTMENT

By Winthrop Wetherbee, Jr., M.D., junior visiting physician, Boston City Hospital. Paul B. Hoeber, New York, N. Y., 1939. Price, $1.00.

The author begins this small, mimeographed book with the general considerations of outpatient work. He advises the interne on how to derive the utmost experience for himself and at the same time be of the most benefit to his patients. In the next and largest portion are embodied hints on diagnosis and clinical maxims. These are both general and specific in character and have their origin in errors which the author has most frequently seen made by new students in the clinic. He concludes with short sections on treatment, prognosis, and an outline for history taking and physical examination. One should mention also a short but valuable foreword by Dr. George R. Minot.

This book should be required reading for all new internes in the outpatient department, and the practicing physician will find it both pleasant and profitable. J. W. J.

MEDICINE IN MODERN SOCIETY

By David Riesman, M.D., professor of the history of medicine, and professor emeritus of clinical medicine, University of Pennsylvania. Princeton University Press, Princeton, New Jersey, 1938. Price, $2.50.

From a series of lectures which the author prepared and which he delivered at Princeton University has come the book, Medicine in Modern Society. Prepared primarily for the lay mind, nevertheless, the author, in his charming and inimitable way, has published a book which should appeal with equal force to the medical student and to the physician. He has dealt with many of the fundamental facts of medical history, tracing their origin and showing their influence on the present day conception of modern medicine. He has put into readable form his idea of medicine from its earliest stage, showing how the votaries of medical thought and practice have in all ages and in all generations cleaved to that which was good and discarded that which was found to be of little or no value or which was rendered inferior by new findings as man made progress in the field of scientific medicine. It aptly has been pointed out that in these times of world chaos and destruction, when economic and social problems are all askew, medicine alone has neither faltered nor failed, but has kept far advanced of all other professions and has added continually to its store of knowledge for the relief and betterment of mankind. To the man—be he citizen, patient, or medical colleague—who is privileged to know the author, the words from his pen so ably written and so fascinatingly arranged will be read with the keenest pleasure, for in this volume they reflect, just as the mirror reflects light or objects, the personality of the man who has given the reader an innermost glimpse of his mind and soul as he has drawn for him a word picture, emanating from a storehouse of medical lore filled from a long, successful and active medical practice. T. B. T.

SURGICAL TREATMENT OF HAND AND FOREARM INFECTIONS

By A. C. J. Brickel, M.D., departments of anatomy and surgery, Western Reserve University, Cleveland. The C. V. Mosby Company, St. Louis, 1939. Price, $7.50.

This publication merits a foremost place among new surgical treatises. It is limited to a special field, but that field is one of the most anatomically intricate and functionally delicate in the body. It is, in fact, the bread and butter producing region for most persons in our day.

Artistic and anatomically accurate diagramatic and natural color illustrations of carefully detailed dissections present pictures that will gleam brightly in the memory when clinical and surgical problems in this region confront the surgeon. Inserted also are valuable plates which show clearly areas for making incisions throughout the hand and forearm with safety for the underlying important structures. Following these illustrations cases are presented which demonstrate in detail the pathologic processes which involve the fingers, hands and forearms. These discussions are rendered particularly clear by the presence of photographs and roentgenograms making each case actually a valuable clinical consultation with the author.

The reader is impressed by the common sense approach to diagnosis and treatment. The meticulous and unremitting attention required to protect and preserve the tendons, nerves, fascial and boney structures, and their important and complicated functions is gathered from every page.

This book is recommended as a beautifully and practically illustrated anatomic and surgical guide in a field where error may result in the most serious functional and economic consequences that are possible in medical practice. P. A. W.

OUTLINE OF ROENTGEN DIAGNOSIS

By Leo G. Rigler, M.D., professor of radiology, University of Minnesota. J. B. Lippincott Company, Philadelphia and London, 1938. Price, atlas edition, $6.50.

This volume is published in two editions, one with a paper binding (without atlas) and the other with a cloth binding which has an atlas in the back illustrating the x-ray findings in various pathologic conditions.

The author has compiled in outline form, concisely and well, the principles of roentgen diagnosis with a mixture of anatomy, physiology, and pathology. It is intended primarily for the use of students, although general practitioners who wish to correlate quickly the principal x-ray findings in various diseases will find it of value. It is not a reference work for the radiologist but is an excellent guide for graduate instruction. We heartily recommend the book for the purpose for which it was intended. J. V. P.

HEALTH INSURANCE WITH MEDICAL CARE, THE BRITISH EXPERIENCE

By Douglass W. Orr, M.D., and Jean Walker Orr, Menninger Clinic, Topeka, Kansas. The Macmillan Company, 60 Fifth Avenue, New York, 1938. Price, $2.50.

This book should interest Iowa doctors because it was written by a son and daughter-in-law of Dr. J. Winnett Orr, well known orthopedist of Lincoln, Nebraska; and also because it presents a midwestern view of the English system of health insurance. The authors are midwestern in nativity and education. Dr. Orr was trained in medicine at Northwestern University Medical School and Cook County Hospital in Chicago; Mrs. Orr is a graduate of the University of Wisconsin and the University of Chicago School of Social Service Administration. Immediately after the doctor completed his interneship, the Orrs proceeded to London under the auspices of social welfare organizations for the purpose of surveying the English panel system. In London they were received by social workers and lived in one of the oldest social settlement houses. They approached their problem by direct contact and interviews with all classes of insured persons, and with all types of medical personnel. Their account makes the reader feel that he is brought face to face with the problems of the patient and physician in England. The book is obviously a bona fide attempt to portray the faults as well as the benefits of the system in vogue.

This reader is left with the impression that the book reflects the friendly attitude of insured persons toward insured medical services, but conveys little idea regarding the quality of medical services under this plan in England, as compared with the quality of medical services in the United States. Among the shortcomings of the system, the authors emphasize the incompleteness of services covered by insurance and the limitations, because dependents of wage earners are excluded. The authors quote both the workers and participating doctors as favoring the extension of the service. The doctors complain of the red tape involved in collecting fees for special services to insured persons which are not included in the contract or agreement. The development of increasing responsibility in health services by governmental agencies and compulsory insurance is clearly indicated—"public health" as formally understood; services in the field of maternal and child hygiene; tuberculosis; mental and nervous disease; then compulsory health insurance for limited medical services.

The authors predict early development of similar procedures in this country, and try to reconcile the attitude of the American Medical Association toward compulsory insurance by an analysis of the "ten points" (adopted at the special session of the House of Delegates of the American Medical Association in Chicago in September of 1938) in terms of their experience in England. They attempt to show that most of the ten points are preserved for the British profession in the panel system. F. M.

PERSONAL AND COMMUNITY HEALTH

By C. E. Turner, A.M., Dr. P.H., professor of biology and public health, Massachusetts Institute of Technology. Fifth edition. The C. V. Mosby Company, St. Louis, 1939. Price, $3.00.

The author centers his discussion by arrangement and development about the concept that hygiene and sanitation combine to form a science based on normal physiology. He clearly demonstrates that voluntary hygiene which conflicts with natural or autonomic bodily functions is not hygiene.

This book is written as a text for undergraduate college students enrolled in beginning courses in hygiene and sanitation, or personal and community hygiene, as the courses may be variously termed. It more satisfactorily reaches the level of college requirements than do many other texts written for the same groups. Chapter titles, appendices and glossary are similar to those of the fourth edition. While the color plates are also similar to those of the previous edition, certain minor changes have been made in the 127 illustrations. "Eye-toned" paper is used. This text is finding wide use in colleges.

Although courses in hygiene vary widely in subject material and intensity as they are offered in different colleges throughout the country, this text is proving suitable in many colleges where a text, rather than a departmental syllabus, is followed. R. H. H.

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OCULAR DISORDERS DUE TO EXOGENOUS TOXEMIA*

WILLIAM L. BENEDICT, M.D.
Section on Ophthalmology, The Mayo Clinic, Rochester, Minnesota

Systemic poisoning due to the absorption of some toxic substances formed outside of the body has a deleterious effect on the function of the eyes. The most common symptom is some form of visual disturbance such as dimness of visual acuity, loss of vision due to central scotoma, contraction and sector defect of the peripheral fields, disturbances of color vision, night blindness and photophobia. Disturbances of ocular motility from paralysis of extra-ocular muscles, peripheral nerve palsy, or even central or nuclear paralysis are known to be associated with general toxemia from some poisons, and when they occur as early signs, or as often seen, the only clinical sign or symptom of toxemia, their significance becomes apparent. Since the same symptom may be due to endogenous toxemia, the customary procedure is to undertake an exhaustive search for foci of infection within the body or to establish, through history and physical examination, the presence of some systemic infection or chronic disease. That is, of course, the proper way to find the patient's disability. Too often, however, the search does not extend beyond the common diseases, and ceases with negative findings for syphilis, tuberculosis, encephalitis, polio-encephalitis, multiple sclerosis, infectious diseases and foci of infection. The probability of toxemia of exogenous origin may be neglected except in obvious circumstances of exposure in industrial or occupational fields, or in cases of addiction to drugs, misapplication of drugs, or idiosyncracy to them.

The rapid growth of industry has stimulated the development of new chemical compounds which as yet have not been checked for toxicity and whose pharmacologic action is unknown. These new substances may be found in the laboratory, the workshop, or the home. New alcohols, some of them products of distillation of petroleum and consequently economically used in anti-freeze mixtures, in fluids for hydraulic brakes, and in the manufacture of surface coatings, lacquers, solvents and plastics are sold in the open market under trade names that in no way reveal their identity or their poisonous character. Drugs and chemicals used in cosmetics and depilatories and dyes, and bleaching compounds used in fur and fabrics are hazards, particularly to persons who are susceptible to poisoning from small quantities, who have an idiosyncracy to certain substances, or who innocently enough are subject to unusual contact or exposure.

Some exogenous toxins that disturb vision act directly on the optic nerve to produce inflammation and atrophy through demyelination of the fibers of the optic nerve, whereas from others the action on the nerve and retina may be secondary to action of the toxin on the blood vessels resulting in ischemia of the nervous system. Some poisons act directly on the blood to produce anemia and subsequent blindness through optic atrophy. Paralysis of the ocular muscles is brought about similarly. The frequency with which ocular disorders are found to be due to exogenous toxemia warrants our study and consideration.

Poisons which directly affect the optic nerve are divided into two groups on the basis of the manner in which the nerve is affected. One group of poisons which produces chronic retrobulbar neuritis acts directly on the nerve. Acute inflammation results in sudden blindness, followed by partial or complete recovery after a few hours or a few days, but not infrequently the vision gradually declines again to eventual blindness within a few months, notwithstanding the fact that no subsequent exposures to the poison are suffered. Chronic poisoning from small amounts of poisonous substances absorbed over a considerable period results in gradual diminution of the vision which eventually goes on to blindness through optic atrophy.

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These are protoplasmic poisons. Prominent among the group of poisons which produces blindness through retrobulbar neuritis are: alcohol, nicotine, carbon disulfide, hashish, iodoform and the arsenical compounds. There is another group of external poisons which produces blindness through other forms of optic neuritis and disease of the retina. Poisons of this group, instead of acting directly on the nerve fibers, affect the nerve secondarily through contraction of the small blood vessels of the nerve or retina, or through changes in the blood. In this group may be found lead, quinine, salicylic acid, sodium salicylate, cocaine, snake venom, silver salts, mercurial preparations, ergot, nitrite of amyl and nitrous oxide gas.

The first sign of toxic amblyopia may be misty vision. Persons who have been exposed to poisons which affect the optic nerve or the retina as a rule complain of temporarily disturbed vision as a first symptom. Recent color blindness is an early symptom of poisoning of either of the two described groups. Another common symptom is disturbed vision, described as heat waves. Diminished visual acuity and general depression of the visual fields bring the patient to the oculist usually with a request for glasses. The characteristic changes in the fields are central or paracentral scotomata and disturbances in the color field. There may be deficiencies in accommodation.

The manner in which a person is exposed to a certain poison may not be recognized, except after careful questioning about the conditions of living or the habits of the individual and his exposure to toxic substances through occupation. Because certain persons have an idiosyncrasy to drugs, exposures which would be insignificant to normal individuals become of great importance to persons who are sensitized. For instance, absorption of a small amount of nicotine by a person who is sensitive to it will produce temporary changes in systemic blood pressure and in the blood supply to the retina.

The alcohol which is usually responsible for blindness is methyl alcohol. When taken in moderate quantities (30 to 50 cubic centimeters), it will produce, very quickly, a severe retrobulbar neuritis with amaurosis lasting twenty to forty hours, followed by almost complete recovery of vision for a short time. Gradual failure of vision through optic atrophy then sets in which not infrequently leads to permanent blindness. Ethyl alcohol also produces blindness through its action on the optic nerve. However, only chronic alcoholic individuals are likely to suffer from severe amblyopia, and even then it is well known that persons who combine the use of alcohol and tobacco to excess are the most frequent victims of blindness from these toxins. In the past few years our conception of amblyopia due to alcohol and tobacco has been modified. Certain investigators have shown that a deficiency of Vitamin B_1 and Vitamin B_2 complex in regular diet is actually responsible for the blindness, inasmuch as alcohol and tobacco may be continued in the usual quantities after blindness has set in and yet complete recovery will follow the administration of adequate amounts of these vitamins. It has been shown also that alcohol-tobacco amblyopia can be made to disappear by the administration of nitroscleran or other substances which open the capillary circulation. Blindness brought about through the excessive use of tobacco apparently depends on the amount of nicotine absorbed. Because cigars contain much more nicotine than cigarettes or package tobacco, amblyopia is more frequently found among cigar smokers. In the treatment of alcohol-tobacco amblyopia, there is good reason for demanding complete abstinence, but it has been proved that this is not necessary.

New alcohols recently have been used in industry. Some of these alcohols are highly toxic, yet their development has been so recent that pharmacologic studies have not been made and their action on the human nervous system has not been determined. Alcohols that are produced through distillation of petroleum are low in price and are used widely in industry. The low freezing point of these industrial alcohols makes them useful in antifreeze compounds and in hydraulic fluids. The brake fluid used in certain automobiles contains large quantities of allyl alcohol, which we know to be capable of producing severe burns of the conjunctiva and cornea.

Carbon disulfide is widely used in the manufacture of rubber as a solvent of fatty bodies in essential oils and resins. It is also used in refrigerating plants. Absorption takes place through the respiratory tract and through the skin. It is distinctly poisonous to the central nervous system, particularly to poorly nourished, neurotic persons, women, and young persons, and causes optic atrophy, neuritis and cerebral degeneration. The drug is used extensively now in the artificial silk industry. Early symptoms are disturbance of central vision, loss of appetite and sexual impotence. Ocular symptoms consist of diminution of visual acuity which in a certain number of cases develops early in the poisoning and progresses without pain much like tobacco amblyopia. Close work brings on lacrimation and symptoms of ocular strain. The amblyopia is due to inflammation of the optic nerve and is complete in three or four months if

the exposure continues. If the attack has been severe, recovery of full vision is hardly to be expected.

Thallium, a metallic substance which is used in cosmetics as a depilatory, has been the cause of blindness through optic atrophy, and several cases have been reported. The toxemia is gradual, but is accelerated through the cumulative action of the drug. Some well known cosmetics containing thallium have been withdrawn from the market, but its presence should be suspected in cases of toxic amblyopia.

Among the nitrocarbons, dinitrophenol and dinitrobenzene are the most common offenders in the loss of sight, taste and hearing. We are familiar now with the effects of dinitrophenol on vision because of the rather common development of cataract among persons who used dinitrophenol as a weight reducing drug. However, workers in rubber and dye industries are frequently exposed to nitrocarbons in dangerous quantities and may become permanently blind before realizing the danger in their work.

Toxic amblyopia due to a substance of the second group probably is most frequently the result of lead poisoning, the greatest poison hazard in all industry. Until the past few years lead poisoning was an outstanding industrial hazard. We are all familiar with some of the cardinal signs of plumbism, namely, discoloration of the gums, progressive paralysis, and stippling of the blood cells. It has now become common knowledge that mild forms of lead poisoning frequently occur among persons who have no knowledge of unusual exposure. The so-called "lead line" is now seldom seen even in moderately severe cases of lead toxemia. This is said to be due to better hygiene of the mouth brought about by the common use of the toothbrush and dentrifices. Furthermore, only severe cases of lead poisoning are likely to show stippling of blood cells. In large industries, workers who are exposed to fumes of lead are examined at regular intervals for plumbism. Industrial physicians have developed a quick serologic test that gives in a few minutes a quantitative determination of lead in the blood. Those who show an idiosyncrasy to lead are transferred to some other line of work. However, in most industries exposure to lead poisoning is controlled adequately so that cases of amblyopia from lead do not appear.

Our clinical experience, however, has shown many unexpected means of lead poisoning. Therefore, in any case of toxic amblyopia, provocative tests for lead are made. Similarly, tests for arsenic also are made easily and quickly by testing the hair in which arsenic will always be found if it is present in toxic quantities. Since the metabolism of lead and calcium run parallel, changes in the diet affect the amount of lead that may be found in the blood, because a deficiency or surplus of calcium in the food will bring out deposition of lead in the bones or its expulsion from them. Fluctuation in lead mobilization can be followed easily by making quantitative estimates of the amount of lead excreted in the urine.

Lead is carried in the blood as a dibasic phosphate and is carried in the skeleton as a purely soluble tribasic phosphate. In chronic plumbism, 95 per cent of the lead is deposited in the skeleton from which it is gradually excreted. Alcoholism and fever may precipitate an attack of acute plumbism. Administration of an acid, together with a milk-free diet will bring about a liberation of stored lead into the circulation with resulting symptoms. The metabolism of lead is shown to run parallel to that of calcium, because the methods which draw calcium to and from the bones likewise affect lead. In acute plumbism it is desirable to encourage passage of lead from the blood to the bones by giving milk rich in calcium and magnesium phosphate. Lead may be released from the bones by the production of acidosis, by inducing fever or by giving a calcium-free diet. Lead, absorbed from the air in quantities of two milligrams or more daily, is changed to phosphates in the erythrocytes which become hard and brittle and are made to shrink, causing anemia.

In a given case of lead poisoning there is some question as to whether the lead should be fixed or whether it should be eliminated from the body as rapidly as possible. The method of treatment applicable in any case depends largely on the toxic effect of the lead on the nervous system. It has been stated by some investigators that in the presence of lead palsy or toxic amblyopia due to lead, the neuritis will not be increased by efforts to drive the lead out of the system. Others hold that the neuritis is a direct result of the amount of lead in the blood serum, and advise fixing the lead in the bones until the neuritis is ameliorated. In either event, if blindness from neuritis is complete and lasts for a considerable time, the chances for recovery are very slight.

An interesting patient who had plumbism with blindness recently came under our care. A small child, five years of age, became blind during recovery from an attack of the measles. After several days of fever, and when her general symptoms began to improve, her vision failed very rapidly so that in three or four days she had only perception of moving objects. As the child did not appear to have meningitis, encephalitis, or other complications of measles which might contribute to her

blindness, a search was made for toxic substances. Examination of the urine showed an unusual quantity of lead, probably sufficient to produce optic neuritis. It was later determined that this child had absorbed lead from the drinking water in her home which was transported in lead pipe. In all probability the quantity of lead which she had absorbed would have been innocuous had it not been for her attacks of fever. This brought the lead out of the bones and into the blood stream in sufficient quantity to produce optic neuritis. She had no other signs or symptoms of lead intoxicacation. It was possible in this case to vary the quantity of lead at will by the administration of calcium and a diet rich in milk, alternated with artificial production of fever. Lead may be mobilized by the administration of sodium bicarbonate, twenty grams four times a day.

It is thought that lead brings about amblyopia through its toxic effect on the small blood vessels. Other substances which produce blindness by their effect on the blood vessels may act either through degeneration of the vessel wall or by producing a change in the caliber of the vessel. Quinine, salicylic acid and sodium salicylate act on the small blood vessels to produce ischemia. The occasional cases of lead encephalopathy that occur nowadays are usually cases of individual hypersensitivity to lead. An attack frequently comes on suddenly with convulsions, but may be preceded by visual disturbances. Recovery, if it occurs, is slow. In lead poisoning, amaurosis occurs due to lead meningitis rather than to encephalomalacia. We have no proof that lead causes arteriosclerosis or high blood pressure. Because of its reaction on the blood vessels, however, apoplexy and hemorrhages frequently occur.

Quinine amblyopia is seen only among individuals who are hypersensitive to the drug or after a very large dose has been taken. Amblyopia is due to spasm of the arterioles of the brain, of the optic nerve and of the retina. Large doses of quinine taken by persons who are hypersensitive produce severe toxemia which may be fatal. Permanent blindness has been reported and temporary amblyopia is not uncommon. Probably one of the greatest sources of blindness and amblyopia comes from the use of quinine as an ecbolic. Quinine given in small doses for certain neuropathic diseases may not be well tolerated, and serious visual disturbances have followed administration of three to five grains of the drug daily over a period of several weeks.

Salicylic acid and sodium salicylate are also vasospastic and administration of large doses to normal individuals or small doses to hypersensitive persons brings about noticeable ischemia of the retina. Temporary diminution or amblyopia may be noticed.

Carbon monoxide produces blindness, complete or incomplete, transient or permanent, as an accompaniment or sequel of carbon monoxide asphyxia. Blindness usually is a part of a symptom complex of asphyxia, with severe involvement of the entire nervous system, and it passes with the other symptoms. Oxygen starvation, resulting from the prolonged action of carbon monoxide, causes degeneration of the cortical nerve centers, the optic thalamus, or optic nerve, resulting in atrophy.

Derivatives of coal tar are being developed so rapidly that the toxicologists cannot keep up with them. Among the seriously toxic products of coal tar are benzene and benzol. These substances cause extreme leukopenia and anemia, purpura haemorrhagica and retinal hemorrhages. Because of the known danger of these drugs, substitutes are used in industry wherever possible, although these drugs are still used in rubber compounds. Severe and fatal results may come after exposure, and once leukopenia occurs, it is progressive.

THE DIAGNOSIS AND MANAGEMENT OF CARCINOMA OF THE BREAST*

N. FREDERICK HICKEN, M.D.
Salt Lake City, Utah

By means of an intensive program of lay education we have finally succeeded in making the public cancer conscious. Women have been taught to examine their own breasts and to report to their physicians as soon as any abnormalities are detected. As a result of these teachings we are compelled to make an accurate diagnosis of small incipient lesions at a time when the symptoms are few and the physical signs confusing. The gravity of this responsibility has come home to most of us in the form of mistaken judgment. All too frequently we have been chagrined to see what we thought to be a simple benign tumor slowly put on the mantle of malignancy and doom our trusting patient to a cancer death.

Many physicians have attempted to avoid these quagmires of mistakes by advising operative interference in all cases of mammary lesions. Such aphorisms as "It is better to remove a hundred innocent breasts than to overlook one that is malignant" are commonly heard. This is a pernicious doctrine and has been productive of much evil and suffering. The countless mastectomies which are performed each year for fibro-adenomas, lipomas,

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simple serous cysts, galactoceles, chronic cystic mastitis and idiopathic mastalgia are mute but shameful witnesses to the fallacy of such teachings. It affords a woman little solace to be told that the tumor was not malignant if she has had to forfeit her breast in exchange for that information. These unnecessary surgical mutilations have borne the fruits of procrastination. Patients do not seek the advice of their physician when the tumors are small and hence curable, for they fear that such a consultation will inevitably result in operation. An appreciation of this evil has caused such great teachers as Ewing to state that no breast should be removed until it has first been proved to be malignant or to possess malignant potentialities. What a change from the old doctrine! Apparently knowledge and science are slowly replacing fear and indecision. Those who willingly assume the responsibility of treating diseases of the breast must be prepared to meet that responsibility and the confidence which it entails. The informed patient expects competent care; she will not be satisfied with the superficial examination and her fears cannot be lulled by pats on the back or administration of large doses of verbal sedatives. Properly conducted examinations should always give the correct diagnosis of every tumor.

INSPECTION

Alert visual inspection yields much information concerning the developmental, functional and morphologic experiences of the breast. Inequalities of size, shape and position should be noted. Do the breasts hang at the same level? If not, is the abnormal fixation produced by tumors, infection or infiltration? If the patient is asked to abduct and extend the arms slowly above the head, the mobility of the breasts can be studied. If the diseased gland has become attached to the underlying muscle fascia, it is pulled upward and outward by the stretching of the pectoral muscle while the unaffected gland maintains its normal position. In many cases inoperability can be determined by this maneuver alone. Small tumors become visible as they roll over the unyielding thoracic cage.

The skin must be scrutinized for infection, ulceration, fixation or metastatic invasion. "Pitting" of the skin may be an ominous warning of an infiltrating neoplasm, an underlying abscess, a failing myocardium, or a localized edema secondary to an axillary abscess. One of the most pronounced cases of "pitting" which we have seen was associated with a small axillary abscess which exerted pressure on the axillary vessels and produced sufficient retrograde lymphangitis to cause marked "orange peel pitting" of the entire mammary gland. Strangely enough, this patient was sent to the hospital with a diagnosis of inflammatory carcinoma of the breast.

PALPATION

It is imperative that the examiner first palpate the normal breast, noting the relative amounts, consistency and arrangement of the component tissues. This affords an excellent standard with which to compare the diseased organ. Each quadrant of the breast should be examined separately since this eliminates the errors of omission. The palm of the hand should press the breast against the chest wall so that only those tissues which possess abnormalities will present incriminating findings. Normal lobulations of fat, which are frequently mistaken for small neoplasms, will not be felt as isolated tumors, but will appear to blend insensibly with the matrix structures.

The size, shape, texture and number of tumors should be noted. Are they painful to pressure? Are they fluctuant or solid? It is well to remember that a distended cyst can easily be mistaken for a solid neoplasm. Does the tumor seem encapsulated and movable, or is it definitely infiltrating regional structures? One should note the location of the growth, because if it arises in the subcutaneous tissues it is most likely to be a lipoma; if situated in the subareolar zone it is perhaps a papilloma or a retention cyst; while if it has developed in the glandular portion of the breast, particularly the periphery, a carcinoma or fibro-adenoma must be suspected.

The nipple is frequently overlooked in the primary examination unless it is ulcerated, retracted or inverted. Incrustations signify either an infiltrative lesion, such as Paget's disease, or a discharging lacteal sinus. A gentle stripping massage of the nipple will frequently express secretions of which the patient is not cognizant. In four instances, we have been able to express drops of bright red blood from the ducts, thus discovering an asymptomatic papilloma; yet each patient denied previous discharge. All escaping secretions should be examined microscopically because it is impossible to determine the presence of blood by mere visual inspection. A sanguineous discharge indicates the presence of a papilloma or duct cancer; a purulent secretion suggests a suppurative mastitis; a greenish or yellowish fluid is found with chronic cystic mastitis. In one instance cancer cells were found in the nipple secretion and a small, non-palpable duct cancer was demonstrated at operation.

A painstaking examination of the regional lymph glands frequently permits an accurate clas-

sification of the offending mammary lesion. It is customary to examine the axilla with the patient's arm in the abducted position, but this posture tenses the fascial floor of the axillary triangle and prevents digital exploration of the upper third of this space. This can be overcome by abducting the patient's arm to right angles and placing the examining hand so that the dorsum rests against the humerus. As the patient's arm is slowly brought to the side, and the floor of the axilla becomes relaxed, the exploring hand is forced along the inner surface of the humerus high into the axillary space. This maneuver pushes the axillary fat and glandular content medially, so that they are impinged between the examiner's hand and the chest wall. The size, shape, consistency and mobility of the lymph nodes can then be determined. Carcinomatous glands are usually very firm, and movable, but in the later stages they may fuse and form a nodular mass which is intimately attached to the axillary vessels and nerves and to the underlying fascia.

When the hand is high in the axillary space, the lateral border of the pectoral muscles should be carefully examined bimanually for existing lymphadenopathy. The supraclavicular glands can best be palpated by standing behind the patient, and having her turn her head toward the affected side to relax the sternomastoid muscle. The palmar type of rotary compression impinges the lymph nodes between the fingers and the deep cervical muscles so that their characteristics can be determined. No patient with metastatic involvement of the supraclavicular glands is suitable for operation.

TRANSILLUMINATION

Transillumination as introduced by Cutler should form an integral part of every examination. The normal gland has several zones which transmit light with varying degrees of intensity. The periphery of the gland, being composed of adipose tissue, is very translucent. The matrix, consisting of glandular and fibrous tissue, absorbs some of the light and appears more opaque. The blood vessels stand out in bold relief as they honeycomb the matrix. There is a striking variation in the translucency of the same breast during its various functional states; hence it is imperative that the examiner be conversant with these changes. Clear serous cysts transilluminate with the same clarity as does a hydrocele. If the cyst contains blood, pus or degenerating debris, it appears as a small opaque shadow. Papillomas are translucent and will not cast a shadow unless there is an associated intraductal hemorrhage. The blood clot, not the papilloma, casts the shadow. In our series of nineteen papillomas, only 20 per cent were seen on transillumination. Fibro-adenomas, being composed largely of fibrous tissue, absorb the light and cast a definite shadow. Carcinomas have no distinguishing characteristics.

MAMMOGRAPHY

In spite of the accessibility of the breast, radiographic visualization has not been very informative. This is because the neoplasms possess the same radiolucency as the parent tissues. By employing the use of contrast substances, however, we have developed a technic which permits an accurate visualization of the component structures of the breast and any existing neoplasm. This is accomplished by two methods. The first is called mammography, and consists of introducing non-irritating radiopaque substances into the milk ducts. Stereoscopic roentgenograms give an exact reproduction of the injected ducts, visualizing any existing abnormalities. During the early studies several different contrast media were used, but we found that skiodan viscous (sodium iodide in gum acacia, Winthrop) is the most satisfactory agent. It is non-irritating and is readily absorbed by the blood stream, so that no trace of the substance is found within the breast fifteen minutes after the injection. These mammographic studies are not only useful in studying the diseased breast, but afford an excellent method of noting morphologic changes incident to functional activities. The second method, called aeromammography, consists of inflating the perimammary tissues with carbon dioxide gas so that contrast roentgenograms can be made. If the true matrix is surrounded by a contrast capsule of gas, the normal and abnormal markings of the breast are accentuated, so that an accurate diagnosis of cysts, fibroadenoma and lipoma is possible. No one appreciates the limitations of these visualization studies more than we do. Not only must the surgeon be skilled in the performance of these tests, but the radiologist must be able to interpret the roentgenograms, a feat which requires much training and study. If used properly, however, these mammograms are very valuable in recognizing small, asymptomatic tumors.

BIOPSIES

Bioscopic examinations furnish important diagnostic and therapeutic information. Like all valuable tests, however, this "biopsy horse" is ridden to death. All too frequently, the clinicians resort to surgical exploration before the simpler diagnostic procedures have been exhausted. A careful history and painstaking examination may make biopsy studies unnecessary for clinical diag-

nosis. Bloodgood vehemently decried the unwise practice of indiscriminately cutting out pieces of tumors for microscopic diagnosis. All border line tumors should be subjected to bioscopic examination before one resorts to major surgical procedures however. Harrington maintains that no breast should be removed without the benefits of a frozen section diagnosis, because then the surgeon can safely employ conservative or radical measures, as the case warrants. When indicated, the corrective operation should immediately follow the bioscopic studies; delay only breeds recurrences and invites dissemination of the destructive growth. The radiologist is dependent upon microscopic studies in order to determine the type, virulence and radiosensitivity of the tumor. Even in cases considered inoperable, bioscopic examination is necessary. To treat all cancers without the aid of proper classification is like sailing an uncharted sea. There are three methods of performing biopsies, each with its advantages and limitations.

Aspiration biopsy: This method consists of aspirating neoplastic cells through a small bore needle and subjecting them to microscopic examination. Since this can be done without hospitalization and with minimum trauma, it saves the patient time, money and suffering. There are, however, certain limitations. It requires the services of a pathologist whose special training permits him to interpret the morphologic structure of a single cell in terms of malignant trends. It is extremely difficult to aspirate cells from small tumors, and one can never be certain that the specimen was obtained from the suspicious area, since one portion of a neoplasm may be benign and another cancerous. It is apparent, therefore, that a positive diagnosis means much, while a negative finding has no significance. This method of diagnosis has been effective in only 25 per cent of our cases.

Punch biopsy: Special instruments have been devised for punching out small segments of deep-seated breast tumors. While this procedure has the advantage of removing a larger piece of tissue than does the aspiration method, it is open to the same criticism. In 55 per cent of our cases, the suspicious neoplasm was so firm and fibrotic that no specimen could be extracted. It is useful, however, in studying the regional lymph glands for metastasis.

Direct incision (excision) of the tumor: Surgical exploration of the tumor, either by excision or incision, furnishes the most satisfactory method of obtaining tissues for study. It not only permits both macroscopic and histologic study of the offending tumor, but permits the surgeon to examine the adjacent tissues. Improperly performed biopsies are dangerous. Therefore, the following principles should be remembered.

1. Whenever possible the entire tumor mass and some adjacent normal tissue should be removed. If the tumor is benign, nothing more need be done; if it is malignant, dissemination has been minimized.

2. Fragmentation or cutting into the tumor should be avoided because the trauma provides an added impetus for neoplastic growth and also invites infection.

3. If it becomes necessary to remove just a segment of the tumor, the tissue should be taken from the periphery of the lesion. All too frequently the specimens are taken from the center of a degenerating tumor and the pathologist is unable to make a correct diagnosis.

4. All biopsies on suspicious tumors should be done in the hospital so that immediate operative correction can be employed if needed. Delay begets recurrence, and accelerates tumor growth.

5. If malignant tissue is encountered and further operations are to be employed, it is imperative that the biopsy wound be cauterized or packed with gauze, impregnated with ten per cent formalin. This minimizes dissemination of malignant cells by killing those that are viable along the margin of the incision.

6. The initial biopsy incision should be so planned that it will not interfere with radical operation, should the latter become necessary.

METASTASES

The examination is by no means complete when one is able to classify the tumor; there yet remains the difficult problem of selecting the proper type of therapy. It is not sufficient to know that a tumor is malignant; one must determine the type of malignancy and the extent of the neoplastic process. The primary tumor may be resectable but if the supraclavicular and intramediastinal lymph glands, the lungs, and the skeletal system are giving succor to metastatic growths, then surgery loses its curative power. The entire body must be carefully scrutinized for secondary malignant foci before any form of therapy is applied. No patient with carcinoma of the breast should be subjected to a radical operation unless a careful roentgenologic examination of the chest, vertebrae, skull and long bones has been made. In rare instances, the small metastatic lesions may fail to produce identifying roentgenologic signs, but in the majority of cases these secondary foci can be readily visualized. The skeletal system should be particularly studied if the patient complains of pain. Some surgeons object to the ex-

pense of these roentgenograms, but it is much better to spend a few dollars to determine whether the case is operable than to submit the patient to the greater expense of hospitalization and a useless operation, to say nothing of the suffering and personal discomfort. The operability of patients with carcinoma of the stomach, colon or any part of the gastro-intestinal tract is largely determined by x-ray studies. Why should we be so reluctant to use the same measures in patients with carcinoma of the breast?

Experience dictates that certain percentages of our therapeutic failures have been due to our negligence in using the radiologist. I recall one instance in which the patient sustained a pathologic fracture of the femur while convalescing from a radical operation on her breast. Roentgenograms demonstrated that the femur was practically destroyed by metastatic lesions. Another patient died following mastectomy, from what the surgeon termed a "bronchopneumonia", but autopsy revealed that both lungs were practically destroyed by carcinomatous tissue. A third woman developed typical Jacksonian epilepsy while waiting for the mammary incisions to heal, and an x-ray revealed three metastatic nodules in the skull. Preliminary radiologic studies would have averted all of these errors. Such are the sins of omission.

This general method of examining breast tumors will invariably result in an accurate diagnosis. In the majority of cases, not all of the above mentioned studies are required, but in the borderline tumors even biopsies must be employed.

FIBRO-ADENOMAS

Fibro-adenomas most commonly occur in the breasts of young women. They are seldom seen before puberty and are rarely encountered after the menopause. According to Lewis and Geschickter, these tumors result from abnormal response of localized breast tissues to the ovarian hormones. Assays determine them to be rich in estrin. They are usually painless, grow slowly and are situated in the central and peripheral segments of the breast. During pregnancy, they may grow with astounding rapidity. While usually single, they occasionally appear as multiple tumors and may even involve both breasts. They are solid tumors, of an ovoid or bosselated shape, are freely movable, arise from the breast matrix, and are opaque to transillumination. Carbon dioxide insufflations clearly outline the extent of the tumor, visualizing its confining capsule and accurately locating the lesion. Fibro-adenomas are benign neoplasms and seldom, if ever, undergo malignant transition. Degenerative changes are common, due to an inadequate blood supply which leads to central necrosis and cyst formation. The usual treatment for a single fibro-adenoma is enucleation of the neoplastic mass with its sheath. When the tumors are multiple, a simple mastectomy is in order.

LIPOMA

Most lipomas of the breast arise in either the subcutaneous or retromammary zones; occasionally they do develop in the midmammary area. Lipomas situated in the subcutaneous area are soft, spongy, bosselated and encapsulated, points which make their recognition easy. When, however, the fatty neoplasms grow on the posterior aspect of the mammary gland, their physical features are difficult to determine for they closely mimic a carcinoma. Their growth is slow and they usually attain considerable size before the patient become conscious of their existence. We have found the mammographic insufflations invaluable in recognizing these tumors. Being encapsulated, they are clearly outlined by the carbon dioxide, and the radiolucency of the fatty tissue makes it stand out in bold contrast to the surrounding fibrous matrix. The entire tumor must be removed, care being taken not to rupture the delicate capsule, because if small fragments are left behind recurrences are not uncommon. In one instance, a woman was subjected to a radical operation merely because a simple lipomatous tumor recurred. Such errors are unpardonable.

PAPILLOMA

Papillomas may arise from any segment of the galactophorous ducts, but are generally found in the larger lacteal sinuses adjacent to the nipple. They represent a hyperplasia of both the epithelial cells and the fibrous tissue components of the milk ducts. The epithelial cells proliferate much faster than the connective tissue substratum so that papillomas are compelled to invaginate into the ductal lumen. These tumors are usually painless during growth and the patient is not conscious of their presence unless there is a sanguineous discharge from the nipple. Frequently drops of bright red blood will exude from the duct estuaries, and yet the most painstaking examination fails to reveal the presence of the offending tumors. Not infrequently, pressure over one certain area of the breast or gentle stripping massage will express a bloody discharge. In four instances we have located asymptomatic papillomas by this maneuver, and in each case the patient denied any previous discharges. While a sanguineous or serosanguineous discharge from the nipple is supposed to be pathognomonic of papillomas of the milk ducts, it occurs in many

other conditions such as duct cancers, trauma, sarcoma, Paget's disease of the nipple, acute mastitis and chronic cystic mastitis. Additional information is required before an accurate diagnosis can be made. Transillumination studies will not outline a papilloma unless there is an associated intraductal blood clot, because the tumor mass itself possesses the same translucency as the parent tissue from which it arises. In a series of nineteen papillomas we were able to visualize only 30 per cent by transillumination studies, and only 45 per cent were palpable even after they had been definitely located by mammographic studies.

Contrast mammography finds its greatest usefulness in studying these evasive tumors. Since the papilloma is a proliferating type of tumor which protrudes into the lumen of the milk duct, it produces distinctive "filling defects" which are easily recognized on the mammograms. Not only

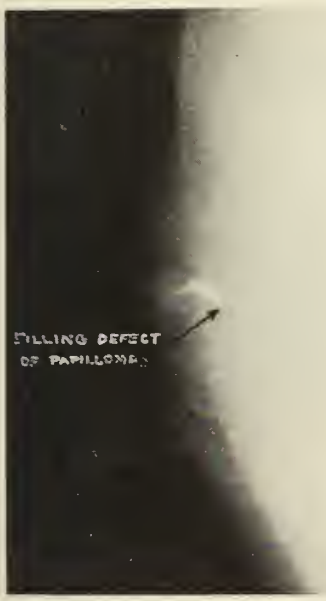


Fig. 1. Mammograms clearly reveal the "filling defect" of a duct papilloma.

can these tumors be accurately located but the number can be definitely determined. Serial sections of breasts and these visualizing mammograms have demonstrated that the majority of papillomas are multiple and that various segments of the same ducts or different areas of the same or opposite breast may be affected. In three instances we have found bilateral papillomas and in the majority of cases the greater part of the duct epithelium shows evidence of proliferation. The tendency for papillomas to be multiple, combined with the fact that they are frequently precursors of papillary adenocarcinomas, seems to justify a complete mastectomy. Three years ago we were advising simple excision of the papillomas, but after making serial sections of breasts containing these tumors we are firmly convinced that such treatment is dangerous. Stowers believes that a simple mastectomy is the method of choice in dealing with these treacherous lesions, since he encountered a small asymptomatic carcinoma lying in a distant part of a breast he had removed because of a bleeding papilloma. In one instance we inadvertently discovered a papillary adenocarcinoma in a breast which had been removed because of a bloody discharge caused by a papilloma of the nipple itself. If the offending papilloma alone had been removed, the carcinoma would have been left behind to grow and metastasize. Recurrence following local excision of the papilloma is not uncommon. This may be due to failure to remove the primary lesion or to the fact that other papillomas have developed. All of these reasons seem to indicate that a mastectomy is the most desirable method of therapy. Regardless of the type of surgery employed it is imperative that the papilloma be carefully studied for evidence of malignant changes. If carcinomatous changes are found, then a radical Halsted operation is indicated.

CYST

Cystic diseases of the breast constitute the most tantalizing group of tumors we are called upon to treat. Presenting very beneficent appearances, they frequently undergo rapid transformation and soon develop into destructive incurable tumors. Many of us have an erroneous concept that all cysts are benign, and when once we demonstrate the presence of a cystic tumor we rest on our therapeutic oars, thinking that we can safely reach the harbor of security, but such is not the case.

Cysts of the breast are not clinical entities but represent transitory phases in the cycle of many types of lesions. The serious import lies not in the cyst itself but in the character of the lesion which produces it. They may occur in any part of the breast as a result of obstruction or dilatation of the lactiferous ducts, or from degeneration of such tumors as carcinoma, sarcoma, fibro-adenoma, lipoma or chronic cystic mastitis. In one instance the cysts are benign and can be treated conservatively, while in another their malignant characteristics demand radical therapy. Cheatle and Cutler estimate that 20 per cent of all carcinomas arise in breasts which have associated cystic changes. In several instances we have seen patients who have had simple serous cysts removed many years previously, and who returned later with advanced carcinomas. Whether the malignant process developed independent of or in

connection with some residual cysts is entirely problematic. Geschickter believes that cystic breasts have no more tendency to undergo malignant transition than the normal mammary gland, but it seems that breasts which are undergoing cystic changes are more prone to produce proliferative types of tumors than are the quiescent glands. The formation of cysts represents abnormal growth response and such a breast bears watching.

As a rule, cysts are discovered accidentally, or the patient's attention is attracted by a mild premenstrual mastalgia. Examination may reveal one or more small, tender, movable tumors which arise from the glandular tissue itself. If distended with pus, desquamative material or blood, they appear opaque on transillumination. Serous cysts are translucent and easily identified. These tumors are always multiple, some of the younger forms being so small that they escape detection. In contradistinction to a fibro-adenoma, cysts appear to be part and parcel of the matrix from which they arise, rather than to exhibit any sign of encapsulation.

Mammographic visualizations afford an excellent method of determining the size, shape and number of offending tumors. If the cysts have lost their continuity with the regional ducts, they can be visualized by the introduction of contrast substance directly into the cystic mass. Intracystic papillomas and fibrous tissue septa have been recognized by this procedure. Several instances have occurred where the patient complained of a lump in the breast and yet the neoplasm could not be palpated. After injecting the patent ducts with skiodan viscous, the collapsed cysts were distended and readily palpable. The patients were cognizant of these tumors only when they were distended with serous fluid, but when the secretion had escaped from the ducts, the cysts collapsed and nothing could be felt. We have encountered three of these so-called "phantom" cysts.

Of all tumors of the breast, cysts constitute the most baffling therapeutic problem. To treat them conservatively is to invite malignant changes and to be radical is to produce unnecessary suffering. We have found that large doses of estrogenic hormones are ineffective in curing or arresting the diseased process. It is usually necessary to excise one or two of the cysts in order to determine the morphologic trend of the pathologic process. If there is a tendency for the duct epithelium to proliferate and invaginate into the cysts, if the nuclei of cells are hyperchromatic, we feel that it represents an abnormal growth response and advise a simple mastectomy. On the other hand, if the epithelial tissue is undergoing degenerative changes, if the cells are not viable, then conservative excision is in order.

In search of an answer to this problem we have advised mastectomies in the majority of our cases. Strangely enough, serial sections of these breasts have revealed early duct cancers developing in remote areas of the glands. This has been such a common finding that we cannot ignore the relationship between cystic diseases of the breast and carcinoma. It seems that there is more than a mere coincidental relationship between cysts,



Fig. 2. Mammograms demonstrate a midmammary "phantom" cyst.

papillomas and cancer. In fact they may be different stages of the same process. Some of the tumors undergo abortive or degenerative phases while a small percentage continue along the line of epithelial proliferation and ultimately terminate in a frank carcinoma.

CANCER

One of the most interesting and distressing of all diseases of the breast is carcinoma; interesting, because of the insidious way it entrenches itself, and distressing because it introduces the final scene in the drama of life for its unfortunate victim unless succor is given. While we cannot always cure the devastating process, its destructive influences and resulting discomfort can be greatly mitigated. The old axiom that every lump in the breast of a patient over twenty years of age is cancer until proved otherwise, should always be remembered, but it gives no license to employ radical procedures. Adherence to the rou-

tine examination outlined in the earlier part of this discussion will always yield a correct diagnosis even if biopsies are necessitated. There should be no hesitancy in utilizing surgical exploration, but this should be an adjunct rather than a substitute for the simpler methods.

The symptoms of advanced cancer of the breast are all too familiar to need discussion here. The earliest recognizable symptom is almost invariably that of a lump or tumor of the breast. In my own experience, the first symptom which can be considered in any way pathognomonic of cancer is the loss of mobility of the overlying skin. This sign is best elicited by fixing the skin and then attempting to move the breast upward or outward over the chest wall. Certain exceptions, such as fat necrosis, plasma cell mastitis, chronic abscesses and infected cysts may all produce similar fixation. A solitary infiltrating tumor, arising from the glandular elements of the breast and associated with fixation of the skin and regional lymphadenopathy is usually a carcinoma. Mammographic studies are not informative in these cases and are therefore not employed.

A proper interpretation of existing findings is not only essential to a correct diagnosis, but determines the form of therapy to be followed. Frequently the physician will make an excellent diagnosis and then give unwise and imprudent advice as to treatment. Surgeons are prone to employ radical operations even after the malignant process has extended beyond the reach of the scalpel. Radiologists tend to subject all forms of cancer to irradiation therapy, forgetting that many of them are radioresistant. It, therefore, requires the collective intelligence of the pathologist, radiologist, and surgeon effectively to combat this dreaded disease. If we have not developed a cure for cancer we have at least learned *what not to do*. The following cases typify some of the more common mistakes.

Mrs. J., forty-six years of age, had an extensive carcinoma with marked invasion of the skin, axillary, subpectoral and supraclavicular lymph nodes. An unwise radical operation was performed and in spite of intensive postoperative irradiation, she died three months later from an extensive carcinomatosis. There can be no doubt but that the operation disseminated the metastases and aggravated the rate of growth by lowering the patient's resistance. Such a patient is inoperable and should have irradiation only.

Mrs. B., twenty-three years of age, had a carcinomatous tumor in a lactating breast. An extensive operation failed to remove the carcinomatous tissue because recurrent nodules appeared in the wound before epithelialization could take place. The devitalized skin flaps prevented adequate postoperative therapy and this unfortunate woman succumbed to pneumonitis secondary to neoplastic emboli eight weeks following operation. Patients under twenty-eight years of age, and those having a malignancy associated with lactation, are refractory to surgery. Intensive irradiation gives much better results, which even at the best are disappointing.

Mrs. R., fifty-eight years of age, had a small infiltrating tumor of the breast with a large mass of confluent axillary lymph nodes. This contraindicates operation, but in spite of these findings a radical Halsted operation was done and the invasive tumor was found to be producing a pressure occlusion of the axillary vessels and plugging the axillary lymphatic vessels. Ever since that ill-advised operation, she has had a tremendous swelling and edema of the arm. Prior to surgical intervention she was doing her own work, and now she is an unhappy invalid. Is it any wonder that people lose faith in our healing art?

The surgeon hopefully turned to the radiologist for help, willingly giving him these bad risk problems. Again mother nature demonstrated that irradiation had definite limitations, that cases had to be carefully selected and the treatment intelligently applied. Haphazard, spasmodic and insufficient x-ray therapy has proved to be worse than no treatment at all. Now the radiologist is selecting his cases with the same care and thought as is the surgeon, and surprisingly enough they both find themselves inadequate to cope with the problem. It requires the willing cooperation of both. Perhaps the problem can be clarified by roughly classifying breast cancer into those cases which are amenable to surgery, those which require irradiation and surgery, and those which must be considered inoperable. This is not my own grouping but is a composite idea taken from such men as Pfahler, Portman, Greenough, Lee, Adair and other workers. It is practical and simple, and hence, workable.

Type 1. This group includes 25 per cent of all carcinomas of the mammary gland. If the tumor is small, still confined to the breast matrix and has not involved the skin, pectoral muscles, regional lymphatic glands or other structures, the case is definitely operable. A radical Halsted type of operation, with removal of the pectoral muscles and the axillary lymphatic vessels, will, according to Portman, give 95 per cent five-year cures. Strangely enough, postoperative irradiation does not enhance the curability and therefore is not employed.

Type 2. If the tumor has spread beyond the confines of the breast, if there is only a slight in-

vasion of the skin, if the regional nodes are palpable but still small and discrete, and if there is no evidence of systemic metastasis, then active therapy is indicated. This group includes 30 per cent of all cancer cases. Intensive preoperative irradiation, followed in six to eight weeks by radical operation and later by postoperative x-ray therapy, offers pleasing results. If surgery alone is used, 28 per cent will be alive five years later, but if the above regime is employed, from 55 to 57 per cent will be living without the evidence of cancer. While this treatment is heroic and discomforting, the results justify the measures.

Type 3. Forty-five per cent of all breast cancers fall in the third group, those which are inoperable. The malignant process has spread beyond the mammary gland, and invaded structures and organs which are inaccessible. Ulceration or widespread involvement of the skin, invasion of the axillary, supraclavicular and mediastinal lymph glands, dissemination to the lungs, brain, liver and skeletal systems, all designate an inoperable cancer. These are the fruits of procrastination and delay. In this group, palliation and not cure must be our therapeutic aim. Courageous and heroic irradiation is the only therapeutic agent which possesses deterrent value. One should not criticize the radiologist if he "burns" the patient, because good results cannot be obtained without producing a severe x-ray dermatitis. Many of the failures, and much of the criticism which x-ray therapy receives, have been due to inadequate and improperly controlled irradiation. Occasionally the intense x-ray treatment will cause such a marked reduction in the size of the parent tumor that an apparently inoperable case becomes amenable to surgery. This, however, is rare. Infections, ulcerations and degenerative lesions usually make the radiologist turn to the surgeon for aid.

During the past eighteen months we have induced an artificial menopause in all women being treated for cancer of the mammary gland by irradiating the ovaries. There can be no question but that ovarian hormones have some influence on the rate of growth of mammary tissues. Recently, in consultation I saw twin sisters, each of whom had pulmonary metastasis from breast carcinomas. Since the cases were deemed inoperable, nothing was done except to irradiate the ovaries. Surprisingly enough all evidence of pulmonary involvement disappeared. On another occasion, osseous metastases calcified and became much smaller while the ovaries were being treated. This question is not entirely settled and will require study and observation before sufficient data can be collected to permit a definite answer.

I should like to emphasize that this cancer problem is not such a hopeless one when one considers the comfort, relief from pain and the increased longevity that can be given to these unfortunate individuals. Inactivity, pessimism and conservatism will bear the fruits of death. Our one hope lies in converting the Type 2 and Type 3 cancers into the Type 1. The physician must see the breast cancers before they have become so widely disseminated that only palliation can be afforded. Lay education is doing much to arouse the public to the seriousness of this problem and it now becomes our duty to meet this added obligation by a sense of professional responsibility. Every woman who enters our offices should receive a careful, painstaking examination of the breast. Patients should be advised to have periodic examinations and many early, pre-malignant lesions will be encountered before they have become so entrenched that irradiation is impossible.

508 Medical Arts Building.

Discussion

Dr. H. Dabney Kerr, Iowa City: It is a pleasure to be able to discuss a paper such as has just been presented by Dr. Hicken, particularly because it emphasizes the great importance in making the diagnosis of cancer of the breast. Dr. Hicken has covered the subject exceedingly well and has emphasized in true proportion, physical examination, history of the more minute types, radiologic examination, pathologic examination by biopsy, and treatment.

I think, for most of us who are dealing with this extremely interesting and timely subject, the points which are of most importance and those which I would like to emphasize, are the history and careful examination, the biopsy and the treatment. The work which has been done by Drs. Hicken and Hunt and their colleagues is extremely interesting, and it shows us, in a very graphic way, the anatomic distribution of the lesions which we ordinarily cannot see until the breast is removed. It seems to me, however, that the greatest gain from this type of specialized radiologic examination is that it gives us a better conception of the location, number, distribution and size of these lesions. The treatment is relatively the same. Bleeding papillomas come to simple mastectomy.

The question of biopsy is of exceeding importance. Dr. Hicken has presented this in a very detailed and appropriate way. The necessity for removing a small lesion in toto, without disturbing the tumor itself, is obvious. It is also essential, wherever possible, to have this tissue examined immediately at the time of the removal of the tumor, so that further surgical procedures may be done at once.

I would like, also, to emphasize the point which the essayist has brought out regarding irradiation of carcinoma of the breast. It is not sufficiently realized that a considerable increase in the five-year salvage of women with carcinoma of the breast can

be achieved by the proper usage of irradiation. I fully agree with the type of treatment as he has outlined it. It is unnecessary to irradiate the so-called early Group I type of carcinoma, which is localized, which is not involving skin and which has no palpable axillary nodes. However, we all know that axillary nodes can be overlooked on physical examination. If, however, at the time radical operation is done, the axillary contents are examined and one finds involved axillary nodes, it is necessary to irradiate that patient afterward. All other patients, those who have palpable axillary nodes to begin with and, of course, those which are classed in the inoperable group where they have nodes above the clavicle, should be irradiated preoperatively.

I would like to stress, however, that is is not sufficient to rely on irradiation alone in these cases. This is a supplementary treatment and the radical part of the elimination of the tumor should be left to the surgeon. The question of postoperative irradiation should be left to the radiologist. There are a great many instances in which, because of the intensive preoperative treatment, postoperative irradiation is not desirable. Damage to the skin has resulted from the first course of irradiation, and additional treatment may carry that damage to a point where it may be permanent.

I would like again to congratulate Dr. Hicken on his paper. I am sure we will find it of great value to us.

Dr. Charles S. Krause, Cedar Rapids: The subject presented by the essayist was very interesting, and I wish to congratulate him on his findings.

The ability to make a positive early diagnosis of carcinoma is the best weapon we have to combat this dreaded disease. I have had rather good results from the operation for cancer, but my results were due to the fact that my people have been educated to come to me early for their diagnosis. In regard to the bloody discharge, or serosanguineous discharge without a palpable tumor, I feel that with this class of patients, the injection of gas would be valuable in the hands of an expert, especially in locating the tumor or disease. If we are to deal successfully with these cases, I think we should make early biopsies and not spend too much time observing or waiting.

Dr. Hicken (closing): I wish to thank Dr. Krause and Dr. Kerr for their most timely discussions. Their points were well taken and I agree most wholeheartedly with them. There is just one point that deserves more emphasis, and that is our attitude toward the radiologist. His services are invaluable in the successful management of carcinoma of the breast. We should always cooperate with him by telling the patient that effective irradiation must necessarily produce local discomfort to be effective. The radiologist should never be criticized because his efforts produce a marked skin reaction; this is necessary if the x-ray is to retard the growth of the cancer cells.

RESPIRATORY ALLERGY

A SURVEY OF 283 CONSECUTIVE CASES SEEN IN OFFICE PRACTICE FROM JULY, 1937, TO DECEMBER, 1938

Lawrence J. Halpin, M.D., Cedar Rapids

Hansel,[1] Hinnant,[2] and many others have reported the high incidence of respiratory allergy among the patients presenting nasal complaints as their chief symptoms. Rhinologists in general are commonly recognizing the rôle played by sensitivity to inhalant and food factors in the production of the respiratory complaints.

I would like to report the observations made in a study of 283 consecutive cases of clinical respiratory allergy, seen in office practice from July, 1937, to December, 1938. Cases have been included in this survey in which insufficient time has elapsed since the institution of an allergy regimen has been established or in which no follow-up report has been obtainable. This has been done because of the clinical and historical interest. In the classification of results, those patients who have been under care for a period of less than six months are classified as having been treated for an insufficient length of time to draw any definite conclusions. Those with whom no contact has been made for a period of six months are classified as having no follow-up record, even though they had been seen in good condition at that time. Individual explanation and findings will be presented under each classification. The 283 cases have been grouped according to the major complaints presented on the initial appearance. Many of these, as Tuft[3] has pointed out, have had other previous or associated allergic disturbances, but the major complaints have been the chief basis for classification.

When a patient is seen in the office of a general practitioner, he presents a problem in differential diagnosis, but in the office of the allergist, the diagnosis varies in that it must be an etiologic one. The average allergic patient enters the office with the diagnosis in his opening statement, or even in his appearance and evident symptoms. Because of this feature, one cannot help but feel that the personal clinical history of the patient's symptoms is one of the most important procedures in the investigation of the allergic picture. Often several important leads may be obtained through this one measure and the examining physician can definitely determine whether the patient is an allergic one. Such information is strengthened by the close association of the family history. The history must be very complete. Listing in chronologic order the initial and subsequent attacks, the onset, frequency and duration of each attack, the type of previous treatment, and the subse-

quent result from such therapy has proved to be extremely important and helpful in the ultimate conclusions. This history should include not only the details of the allergic state and complaints, but also any associated disorder. The failure to evaluate properly the importance of these factors often leads to poor results, inasmuch as the improvement reached may be partially based on the correction and treatment of such accompanying conditions as glandular dysfunction, metabolic disorders, and systemic or focal infection.

A complete and thorough physical examination is made routinely, and in this manner no organic or pathologic conditions that may halt or impede improvement is overlooked. Many cases of respiratory allergy have been classed as having poor results because of the failure to correct marked deviations of the nasal septa, spurs, polyps, or an old sinus infection. The correction of these conditions should be carried out, but in the pollen sensitive patient, the surgical attack upon these lesions should be delayed until after the pollen season has passed. Only after a complete physical examination can any special investigative procedure be advised. Laboratory work done routinely should include a red blood count, white blood count, hemoglobin determination, differential count and urinalysis. A positive Wassermann reaction will often explain the stubbornness of some chronic infectious asthmas. Other laboratory work can be done as indicated by the history and physical examination. If evidence of infection is present, a blood sedimentation rate is indicated. In the cases of nasal allergy, a nose and throat examination is necessary and in bronchial allergy, an x-ray of the chest should be done. A definite diagnosis of allergic disease should not be made until every organic possibility has been excluded. The individualization of patients is more important in the field of allergy than in any other specialty of medicine.

After a patient has had a complete history and physical examination, the remainder of the allergy investigation can be completed by skin testing. The method of testing is determined by the history, the age of the patient, and by the accessibility with which the tests can be done. We have routinely tested all patients with the pollens by the scratch method of testing. The back has proved to be the best choice for the location for these tests, because there is a wider expanse than is available on the arms or thighs. The skin is washed with an alcohol solution, and a shallow scratch sufficient to break the first layer of skin, without producing bleeding, is made with a sterile scalpel. By using the back, a greater number of tests may be done at one sitting, and the tests may be spread out so that individual reactions can be recognized with no possibility of cross-reactions. If the patient is pollen sensitive, the reactions can be determined and recorded within fifteen or twenty minutes. Further testing on this pollen sensitive patient is then done by the scratch method of testing, but if the skin is receptive to the intradermal method of testing, the latter is the one to be preferred. Most allergists today rely on the intradermal method to a greater degree than the scratch method. If no pollen sensitivity is found, the intradermal method of testing can be used without further scratch testing, in order to complete the inhalant and food tests.

Varying dilutions of extract are necessary in the intradermal method of testing, because of the variations in the amount of nonspecific flaring that should and can be avoided by the use of an extract in the dilution best suited to the individual patient. In this intradermal method of testing, the extract is injected between the layers of the skin, in an amount of 0.02 to 0.04 of a cubic centimeter. A separate syringe and needle should be used for each individual test. By using the back, fifty to sixty tests can be done at one sitting, and there will still be sufficient space between the tests to prevent extension of any large reaction. The passive transfer method of testing has not gained popular approval as a common procedure, but has proved indispensable in the investigation of the following type of patient: in the child where the mental and physical strain to direct testing would be too great; in patients too ill to stand testing; in cases of marked eczema where lichenification is extensive and prohibits the direct method; and in those cases of urticaria wherein nonspecific flaring is noted with any test that may be applied to the skin by the direct method. In addition to the tests for the pollen, inhalants, molds and foods, sensitivity for bacterial vaccines can often be demonstrated, and these may play an important rôle in the production of complaints, particularly where chronic focal infection is brought to light.

The investigation at this point has been only partially completed. The remainder of the procedure is taken up with instructions to the patient so that he will be well versed in the findings, and in the knowledge and method of procedure so that a good clinical result can be obtained through his utmost cooperation. In placing these patients on an allergy routine, there are many factors which can be successfully avoided by the patient. The foods to which a patient reacts and for which he demonstrates a clinical sensitivity are removed from the diet. No food so removed should be returned to the patient's diet for at least four to six months, and then only as a trial. Adequate dietary

substitution is made, so that the routine will be deficient in no nutritive respect. In doing intradermal skin tests, the average patient will present a few reactions for foods for which he has no known sensitivity, but these, too, are eliminated from his diet at the onset. These, then are the first that are returned to his use. The average patient is also able to avoid such inhalant factors as feathers, animal hairs, and to some extent, house dust. The application of dust proof covers to his pillows and mattress will often give the feather and house dust sensitive patient adequate relief. The removal of an animal pet from the patient's home is often adequate, if this amount of cooperation is obtainable. Changing cosmetics in the orris sensitive patient is often adequate to promote and maintain relief from a nasal complaint caused by such sensitivity.

For those factors which cannot be adequately avoided, the patient must be desensitized to obtain any measure of relief. This is true in most pollen and mold sensitive patients, and in those sensitive to some flowering plants. The perennial method of therapy has been used in the greatest majority of the cases reported, because of the many advantages to the patient. Under this type of treatment, the patient has more hope for permanent immunity, as well as a better result each season. In pollen management, these patients should continue treatment for twelve, eighteen or twenty-four months, and longer in some cases, before lasting freedom from symptoms can be established. In the treatment of the house dust sensitive patient or one whose trouble is caused by an extreme sensitivity to orris root, feathers, or animal hairs, desensitization can be carried out for these inhalant factors if they cannot be adequately avoided. The period of therapy need not be as long as for the pollen, and the results are equally as good.

In the following paragraphs, no indication is given of any therapeutic measures for the relief of the acute symptoms, inasmuch as a discussion of such medication does not have a place in the reports as presented.

SEASONAL HAY FEVER

Seventy-one of the total number of patients seen in this survey were suffering from distinct seasonal hay fever. Forty-three (61 per cent) were female and twenty-eight (39 per cent) were male. The average age of these hay fever patients was 24.13 years, with sixteen (23 per cent) being under the age of fifteen years. The youngest patient was two years of age, and the oldest was fifty-eight years of age.

The symptoms of these patients were comparable with those of the average patient with pollen complaints. Sneezing, nasal congestion, watery nasal discharge, itching, burning, smarting, redness and lacrimation of the eyes were the outstanding evident symptoms. Some also complained of itching, tickling or burning of the palate and inner ears. The average duration of these symptoms was seven years, with the variation being from a few months (in their first season), to forty-seven years.

Regardless of the facts of onset and duration as obtained in the history, all of these patients were completely investigated, being tested for spring, grass and fall pollen, inhalants and foods. Forty-eight (68 per cent) were tested by the straight scratch method, while twenty-three (32 per cent) were investigated by the intradermal method. The treatment in these cases was based upon the history and the results of the skin tests. Many patients presenting a history of only the fall type of symptoms, with very mild nasal or eye complaints during the other seasons, were found to react strongly to the spring and grass pollens. For this reason, desensitization sets were made up for each individual patient, and these contained not only the fall pollen, but also all those pollens to which the patient was sensitive. The percentage of each used in the treatment was based on the history of the severity of symptoms during each season. Several of these patients have been under personal care and management, but a great many have obtained as good results where therapy is carried out by their home physician.

In the treatment of these seventy-one patients, all were placed upon a regimen, based on the results of the skin tests. Where food and inhalant reactions were present, these factors were removed from the diet or the environment during the season. In addition to this eliminative measure, fifty-three or 75 per cent were given perennial pollen therapy; eleven or 15 per cent were given only local therapy inasmuch as the pollen treatment was refused, or the patient did not feel that the symptoms were of sufficient severity to warrant specific therapy. Seven or ten per cent were given only seasonal form of treatment, either because of local or personal circumstances. Twenty or 28 per cent of the total number of hay fever patients were treated for their mold sensitivity in addition to the pollen therapy and the eliminative measures. Alternaria and Hormodendrum were the outstanding reactors, and the treatment of this sensitivity was of marked importance. Patients who had only mild improvement during the season of 1937 were subsequently desensitized for their mold sensitivity and experienced good relief in the season of 1938.

Of the seventy-one cases in this review, sixteen (23 per cent) have been under perennial therapy

an insufficient length of time to be classified as to result. Five or seven per cent failed to give any degree of cooperation, either as to pollen management or eliminative advice. In only six or eight per cent has there been no follow-up record within a period of the last six months. These twenty-seven patients have not been included in the compilation of the following results.

Seven or 16 per cent received excellent relief, in that they had no symptoms whatever during their season. Thirty-two or 73 per cent of the forty-four cases under treatment received good, adequate relief. A good result was recorded in those patients in whom a marked degree of improvement was noted and in whom the amount of hay fever experienced during the season was extremely small. Three or seven per cent had fair relief and two or four per cent must be classified as poor results. In this latter classification, one patient (G. F.) had an infectious, perennial sinusitis, and a perennial bronchitis which was thought to be on an infectious basis, and for which subsequent therapy with an autogenous vaccine was instituted. However, this patient was seen because of the seasonal variation of his nasal complaints, and inasmuch as he continued to have symptoms during the season, he must be classified as a poor result.

In summary, then, seventy-one cases of seasonal hay fever have been reviewed. All of these had complete allergy investigation carried out for them, by scratch and intradermal tests, and forty-four have been under therapy for a sufficient length of time to record the result from treatment. Of these forty-four patients, 89 per cent received good or excellent results, seven per cent had fair improvement, and only four per cent failed to obtain relief to the present time.

SEASONAL BRONCHIAL ASTHMA (WITH HAY FEVER)

Sixty-six cases are grouped as seasonal bronchial asthma. The majority of these patients also had some evidence of nasal or ocular irritation during some of their pollen seasons, but their entrance complaints were directed specifically at the bronchial distress and disturbance. These patients have been separated from those asthmatic individuals who have an occasional attack during a pollen season as well as throughout the winter months. These latter, and some in whom pollen therapy might have been instituted, have been grouped under perennial bronchial asthma. Of the sixty-six cases, thirty-three (50 per cent) were female and thirty-three were male, with the average age being twenty-five years. Twenty-one (32 per cent) were under the age of fifteen, with the youngest being three years of age. The oldest patient was sixty-eight years of age. The average duration of symptoms in these patients was 10.8 years. The parade of symptoms outlined by these patients was constant with most asthmatic individuals. The cough, wheezing, and respiratory difficulty were the three outstanding complaints.

In only two (three per cent) of these patients was the allergy investigation not completed. Of the remaining sixty-four cases, forty-five (68 per cent) were completely investigated with the scratch method of testing. As in the other groups, the complete investigation consisted of testing for the pollens of all seasons, the inhalants, molds and foods. Eighteen (28 per cent) were completed by the intradermal method of testing, and in some of these, good reactions and subsequent therapy could best be obtained and advised after a combination of scratch and intradermal methods of testing had been used. In one patient, the youngest of the group, the passive transfer method of testing was employed. The investigation in this case was of necessity not absolutely complete, but adequate testing with the pollens and 60 to 80 inhalant and food tests could be and were done. In this patient no other method of testing was attempted, and the fact that this patient subsequently experienced an excellent result under therapy is evidence of the value of this method of testing in the very young patient.

In comparing the seasons of the seasonal asthmatic patient with the seasons of the seasonal hay fever patient, it is seen that the periods of distress for the former are prolonged and more complicated. Eighteen (27 per cent) were found to have or to have had associated allergic complaints. This figure does not include the presence of a pollen rhinitis or conjunctivitis, since this was seen in practically 100 per cent of these seasonal asthmatic individuals.

The sixty-four patients who were investigated completely from the allergy standpoint were placed upon an allergy routine, eliminating the dietary and environmental factors to which they demonstrated sensitivity. Because of the multiplicity of reactions and the comparatively short duration of symptoms, the elimination was complete, and was based on history as well as upon the results of skin testing. In addition to the eliminative measures, fifty-one (77 per cent) were given the perennial method of pollen therapy, and of these fifty-one patients under perennial care, eight were treated with dust and mold extract in addition to the pollen. Alternaria, Hormodendrum and Penicillium were the molds to which sensitivity was most frequently established. One of this group of fifty-one was also treated with an autogenous vaccine in a perennial fashion, because of an asso-

ciated infectious element which was felt to be causing an aggravation of his seasonal symptoms. Nine of the total under treatment or 14 per cent were given pollen therapy in the seasonal method of administration in addition to the eliminative procedures outlined above. In two (three per cent) the eliminative procedures were followed conscientiously, but the pollen therapy was refused for personal or other reasons. Since the pollen was undoubtedly the major factor in producing the complaints in these patients, the results were not good, and will be classified below as poor. In only four (six per cent) was there no cooperation whatever from the standpoint of elimination or therapy of any kind. Of the sixty-six cases in this group, thirteen (20 per cent) have had no follow-up record during a period of the past six months. Some of these may have had good results during the season of 1937, but if no reports were obtained from them during the season of 1938, they are classified in this listing. Fifteen or 23 per cent have been under treatment an insufficient length of time to evaluate the result that will be or has been obtained. In the four (six per cent) in whom there was no cooperation, no result has been recorded. Of the remaining thirty-four patients who have been under thorough treatment for a sufficient period of time, five or 15 per cent had excellent results. Twenty (59 per cent) had results that can be classified as good. Four (11 per cent) are in the classification of fair, inasmuch as they continued to have mild asthma during the season, in spite of the fact that the associated nasal and ocular complaints were not present under treatment. Five (15 per cent) must be classified as having had poor results. Of these five, two did not have pollen therapy, but did follow an elimination regimen to the best of their ability.

In the summary of this group then, sixty-six cases of seasonal bronchial asthma have been reviewed. Of these, sixty-three were investigated with the complete scratch or intradermal method of testing, and one was completed with the passive transfer method of testing. Thirty-four patients have been under therapy for a sufficient length of time and with complete follow-up records to state that 74 per cent have had good or excellent results, 11 per cent have had fair results, and 15 per cent were recorded as having had poor results. The treatment in these cases was based on the history, the result of skin testing, and the general clinical factors.

PERENNIAL ALLERGIC RHINITIS

Grouped as perennial allergic rhinitis are ninety-four patients, forty-nine (52 per cent) of whom were female and forty-five (48 per cent) of whom were male. The symptoms of this group were characteristic throughout most of the histories. Year round nasal congestion, associated with periodic attacks of sneezing and marked watery nasal discharge were the main complaints. In some of these patients, previous diagnoses had varied from sinus trouble to frequent colds, with the latter being the usual initial statement. A few had mild aggravation of their symptoms during a pollen season, but they have been herein grouped because of the severity of the perennial distress and disturbance, rather than with the seasonal nasal patients. The average age of the ninety-four patients was 32.7 years, with fourteen (15 per cent) being under fifteen years of age, and eighty (85 per cent) being above that age. The average duration of symptoms was 9.6 years, and at the time of seeking medical relief, practically 100 per cent of these patients had had local therapy, consisting of nasal packs and drainage, with good temporary relief, but with a return of their complaints as soon as the effect of the treatment had abated.

Ninety of these ninety-four patients were investigated from an allergic standpoint. Eighty-five received the skin tests by the intradermal method of testing, while only four (four per cent) were investigated by the scratch method of testing. In this four per cent the major reactors by the scratch test were rechecked by the intradermal method of testing, if the amount of nonspecific flaring was not excessive. Four (four per cent) did not have the investigation completed for them for personal or other reasons. In one (one per cent) the method of investigation was the passive transfer type of testing, and in this patient, as in the passive transfer for seasonal bronchial asthma, an excellent result was achieved. Twelve of the total number of patients in this group were investigated from the point of seeking a cause for the frequency with which nasal polyps would appear following removal by a rhinologist. The association of nasal polyps and allergy of the nasal passages has been reported by many writers, and the fact that these twelve are classified as having good results from the treatment further strengthens this association. In one of these patients with nasal polyps, the removal of the growth had been necessary every three to four weeks to allow adequate space in the nares. Subsequent to allergy investigation and routine, this patient has had no necessity for surgical measures in his nose during a period of seventeen months.

Probably the most difficult decision in the management of these cases has been the differentiation between the true infectious state which may be present, and the superimposed infections which are so commonly seen in long standing nasal al-

lergy. The laboratory has been of distinct aid in this problem, from the standpoint of blood counting and sedimentation rates. An additional laboratory aid has been the repeated use of nasal smears in the search for an eosinophilia. These cells must be seen in sufficient number to be diagnostic, and a single negative smear should not be considered, since repeated smears should be the rule rather than the exception.

All of the ninety patients investigated from the allergic standpoint were placed on an elimination regimen, much as was done for the perennial asthmatic patients. In addition to the dietary management and the care of their immediate environment, further therapeutic measures were indicated and necessary in twenty-five of these patients. In twelve, perennial therapy with a dust extract, usually made from the specimen collected from their own home or surroundings, was instituted. An autogenous vaccine was prepared and used in one patient, because of the presence and importance of a superimposed infectious sinusitis, which had been subbornly resistant to simple eliminative procedures as well as other forms of therapy, both local and general. In two patients, in whom the signs, symptoms and history pointed to the menopausal association, estrin therapy was advised and carried out. Nine patients were sufficiently mold sensitive to warrant therapy with an extract containing those molds to which the patients were sensitive. In one, the perennial nasal complaints resisted all efforts of simple eliminative procedures based on the findings of skin testing, but a good result was obtained by the expedient of introducing a basic, trial diet, and increasing the foods singly until the patient was on as near normal a diet as possible without complaints.

As has been true of the previous groupings, the treatment in these allergic cases must emphasize the individuality of the patients. Though the basic therapeutic measures have been essentially the same, namely, elimination, correction of pathologic associations, and the desensitization procedures wherein indicated, the personal treatment of each problem must be different. Thirteen (14 per cent) of the total ninety patients investigated have been under observation too short a time to be classified as to result. Twenty-three (25 per cent) patients have not been seen in follow-up examination within the past six months and must therefore be so listed. In four (four per cent) no investigation was carried out, and in an additional four cases, there was no cooperation to the instructions given or to the advice extended. Of the remaining fifty patients, three (six per cent) were improved to the extent that their results may be classed as excellent. Thirty-seven (74 per cent) were sufficiently improved over a period of time that good results have been obtained. Of these thirty-seven, the twelve patients in whom nasal polyps were present at the time of investigation must be included. In spite of the fact that there were no recurrences of the nasal polyps necessitating surgical removal, the occasional presence of mild nasal irritation removes these patients from the excellent result class. Three (six per cent) are classified as obtaining fair results because of the mild distress which has continued on simple eliminative procedures. Some of these could perhaps obtain better results if house dust therapy were instituted, but delay in this measure has been permitted so that the true value of its worth may be estimated and witnessed. Seven (14 per cent) have received poor results or have failed to show an encouraging degree of improvement. Complicating factors, unrecognized to the present time, may be the cause for this failure.

In the summary of these ninety-four patients with perennial rhinitis it is found that ninety were completely investigated from an allergic standpoint. Eighty-five were completed with intradermal testing, four with scratch and one with the passive transfer method of testing. Of those who cooperated with the instructions offered to them, 80 per cent received good or excellent results, whereas 20 per cent were the recipients of fair or poor results.

PERENNIAL BRONCHIAL ASTHMA

In the survey of the patients with perennial bronchial asthma with no seasonal variation, it was found that the average age of 47.5 years was considerably higher than that found in the other groups. Of the fifty-two patients in this classification with the above average age, only two (four per cent) were under fifteen years of age. Fifty (96 per cent) of these patients were over this age. Twenty-two (42 per cent) were male and thirty (58 per cent) were female. As would be expected in the older patients, the average duration of symptoms was higher in this group than in the others. The perennial asthmatic patients had an average duration of symptoms of thirteen years. Adrenalin, either by hypodermic in the 1:1,000 or by inhalation in the 1:100 dilution, had been used with good success by the majority of these patients. Other remedies which had been used considerably were asthma powders, ephedrine preparations, and patent sprays and tablets. Practically 100 per cent of these patients had at one time or another been told that the only relief they could ever expect would be derived from a change of climate, away from their Iowa homes and busi-

nesses, to the dry, high altitude of the west and southwest.

Complete allergy investigation was carried out for forty-nine of the fifty-two patients. Forty-eight (92 per cent) of the investigations were completed by the intradermal method of testing, while only one (two per cent) was done by the scratch method of testing. In three (six per cent) of these patients no skin testing was done for one or more reasons.

Practically 100 per cent of the patients in this group were found to have an associated perennial rhinitis, in varying degrees of severity. The presence of associated pathologic conditions was much higher and of greater importance in this group than in the others. This finding was of greater significance in that the pathologic factor was considered as the primary cause of the distress in several of the patients seen.

In the treatment of these patients with perennial bronchial asthma, three (six per cent) were given no therapeutic advice from an allergic viewpoint, but were referred to their physicians for the care of the complicating factors prior to the investigation from the allergic side. In two (four per cent) no cooperation could be obtained after the investigation had been completed, and in spite of a temporary good result in one of these patients, the dietary instructions were not followed to a point which would allow for the classification of the result. In the other patients who failed to cooperate, it was proved that the primary causative agent of their complaints was the family pet, with which they refused to part. In the remaining forty-seven (90 per cent) of these cases, complete elimination of the factors to which they were sensitive was advised and carried out.

In addition to the simple elimination of the foods and environmental factors, it was necessary to institute house dust therapy in seven (13 per cent) of the forty-seven patients treated. The preparation of a dust extract from the patient's own home seemed to be more worthwhile than the use of a stock dust extract, although this latter procedure was completed in two of the above seven patients. Five (ten per cent) of the patients were given therapy with an autogenous vaccine prepared from their sputum. These five were the most severe cases and presented the findings of advanced bronchiectasis. It was the impression of the examiner at the time this mode of therapy was instituted that the vaccine would prove to be of greater value than the accompanying eliminative measures, which were removing secondary and contributory causes of the asthmatic state. One (two per cent) of the patients was treated with estrin therapy as part of the allergy program. A few of the others who were seen with menopausal complaints had had this glandular therapeutic trial with no benefit as far as the asthma was concerned.

Of the fifty-two patients reported, nine (17 per cent) have been under treatment and care for an insufficient length of time to judge or classify the results. Nine (17 per cent) have had no follow-up note made on their record within the past six months, and therefore cannot be classified at this time. In three of these patients, (six per cent) no result has been recorded because sufficient cooperation was not present. Of the remaining thirty-one patients, who have given their best cooperation to the routine outlined and who have been followed over a period of several months, two (six per cent) had excellent results, as evidenced by the fact that they are asthma free, with no medication being needed for any allergic disturbance. Nineteen (61 per cent) are classified as having good results, because of the marked relief which they have experienced with an allergy investigation and therapy. Seven (23 per cent) have experienced fair relief; in spite of the eliminative procedures outlined for them, and the administration of autogenous vaccines and dust therapy where indicated, they still have an occasional attack of bronchial asthma. Three (ten per cent) must be classified as obtaining poor results, inasmuch as they have failed to show any degree of improvement in spite of the intensive measures directed at the cause of their severe complaints. Investigative work is being repeated in these patients, in an effort to find further, more basic factors responsible for the production of their complaints.

In the summary of this group of perennial bronchial asthmatic patients, 67 per cent received good or excellent results, whereas 33 per cent must be classified as having fair or poor results. Of the fifty-two cases presented, a higher average age was noted than in the other groups, and also a longer average duration of illness. The treatment in the cases was based on the history and the findings on examination and investigation, and supplemented by additional measures when necessary.

SUMMARY AND CONCLUSIONS

1. A brief discussion of the methods of approach to the allergic patient is given.

2. Two hundred eighty-three consecutive cases of respiratory allergy seen in private office practice between July, 1937, and December, 1938, are divided into four classifications: first, seasonal hay fever (71 cases); second, seasonal bronchial asthma (66 cases); third, perennial allergic rhinitis (94 cases); and fourth, perennial bronchial asthma (52 cases).

3. Individual summaries are given with each classification.

4. Allergy investigation was carried out by the scratch, intradermal or passive transfer methods of testing. Adequate allergy investigation was completed in 274 of the 283 cases.

5. Encouraging results have been secured in the majority of these patients, and the findings of this survey emphasize the importance of thorough allergy investigation in the determination of the etiology of certain respiratory diseases.

1008 Merchants National Bank Building.

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PERENNIAL TYPE OF NASAL ALLERGY*

JAMES E. REEDER, M.D., Sioux City

When our chairman asked me to present a subject before this section he specifically stated he would like me to adhere to the more ordinary problems with which we, as otolaryngologists, are confronted in our daily routine practice. Therefore, I have purposely selected the above subject.

It goes without saying that we have a much better understanding of nasal allergy today than we had ten years ago. By this I mean we are much more able to separate the surgical and non-surgical cases and treat them in a rational method with a greater satisfaction to both patient and physician as far as end results are concerned. The lack of knowledge of this statement is the very essence which has placed all sinus operations in such disrepute with both the laity and the medical profession. The lack of such information in the past has led to very much unnecessary nasal surgery. At the present time the average patient is so skeptical of any nasal surgery that he often refuses suggested nasal surgery when it is the best procedure to follow.

I purposely will not discuss the non-allergic case which accounts for about 35 to 40 per cent of the cases; that is, the type with negative allergic history, negative rhinologic signs, and with negative smears for eosinophilia in the nasal secretions.

A complete history is the most important factor in the diagnosis of nasal allergy, including both family and clinical history. The objective symptoms should include nasal symptoms, change in mucosa, smears from the nasal secretions, chronic infection or an acute infection superimposed over an allergic mucosa, and x-ray findings. In addition a general physical examination may be indicated in an effort to determine a probable endocrine imbalance because frequently the history will show headache and a gastro-intestinal allergy so far remote in the mind of the patient that it is difficult for the patient to conceive any relationship with his or her nasal blocking, sneezing or discharge, which were the prime reasons for the consultation. As a rule one can rest assured that a very large percentage of these cases are in the nature of a food allergy.

Perhaps the title of this paper is somewhat misleading since it is often so difficult to determine from objective symptoms whether or not one has a case of non-suppurative allergic process or a suppurative process that has undergone polypoid degeneration. However, either condition calls for radical interference, and not until the histopathologic report is checked can one be sure of the classification.

If the x-ray does not show polyposis in the sinuses, such as the antra and ethmoids, as well as gross pathology in the nares, a conservative treatment should be carried out, consisting of a diet of acid base foods plus hydrochloric acid or nitrohydrochloric acid at meal time. It takes about three weeks to change the very pale edematous membrane over to the pink, or normal side. A very large percentage of these cases will show a marked improvement at the end of the three weeks' period. After that I suggest an alkaline food a day to their diet, or until they have a recurrence of their symptoms. Usually by that time if the patient is intelligent he will be educated to the point where by trial and error he will eliminate those offending foods and be quite comfortable. If this procedure is not successful then an eliminating test diet is indicated. If this fails, one should start testing for external allergies, or refer the case to an allergist.

Surgical technic will not be discussed, but where surgery of the antra is indicated an external approach should be done. The diseased membrane should be exenterated and a vaccine made from the culture. If the skin test is positive an attempt should be made at desensitization, since there is evidence that it is helpful where a positive reaction results, but useless where the reaction is negative.

In conclusion I wish to state that the biochemist, up to the present time, has been of great assistance in this very trying symptom complex which is one of our more frequent daily problems. No doubt, in the not far distant future he will have solved the problem completely. I have purposely made this discussion more a summary of conclusions

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than an extensive survey of the literature in order to follow the wishes of our chairman, and trust there will be free discussion on a subject which is an every day problem in our routine work.

Discussion

Dr. W. H. Foster, Clinton: Dr. Reeder has carefully weighed all his statements and there is little, or nothing, that need be challenged.

In my office and in my practice when I first see a suspected allergic patient, I try to make a diagnosis, generally following the methods outlined by Dr. Reeder. We have been fortunate in our community in having men who devote special attention to allergy, and whenever feasible I send the patient to one of them for diagnostic management; history, eliminative diets, skin tests, etc. After a diagnosis has been made the general therapy of allergy is pursued as industriously as circumstances will permit. It is difficult to administer a specific anti-allergic treatment to an intractable allergic case when that patient is allergic to different things at different times, and at the same time, and then ceases to be allergic to the same things at other times. Another difficulty is in securing lasting cooperation from the patients and in educating them as to the length of time needed to complete the immunization. I would like to know the results of other men in anti-allergic treatment. I would like to know what results they get by eliminative diet, both as to diagnosis and treatment. My impression is that in the majority of cases, the treatment is generally unsatisfactory and the most of these patients do not stay well.

Our main objective, from the viewpoint of otolaryngology, is to relieve the patient's uncomfortable and annoying symptoms. In addition to immunization by injecting specific allergens, I administer doses of ephedrine, propadrin, tedral, etc., internally. These substances are usually given by mouth and combined with proper sedatives which counteract the stimulation of the vasoconstrictor. The local treatment to the nose is spraying or applying topically some vasoconstrictor such as adrenalin, ephedrine, propadrin or neosynephrin. Of these, propadrin and neosynephrin produce the least amount of undesirable secondary reaction. In intractable cases of allergy, almost anything that is done locally to the nose acts as an irritant and aggravates the symptoms of nasal obstruction, discharge, intense itching and headache.

I would like to call attention to one form of treatment in allergic rhinitis which has seemed to give rather good results. I refer to the intramural submucous electrocoagulation of the nasal turbinates, introduced by Dr. J. C. Beck. This is particularly indicated in polypoid degeneration of the mucous membrane over the middle and inferior turbinates, where the obstruction has become chronic and has led to secondary infection of the sinuses, due to interference with normal drainage and ventilation. I use the bipolar apparatus consisting of two very slender needles running parallel to one another, which can be plunged into the anterior end of the nasal turbinate and carried back along over the bone in the submucosa. One needle is the positive electrode and the other needle is the negative electrode, connected to the diathermy apparatus. The amount of current used and the length of time is best judged from information gained by experience and experimentation. During the first few days, after electrocoagulation by this method, the patient usually gets a severe reaction, and then at the end of two to four weeks, there is a definite improvement. The theory is that cicatrization, in time, takes place within the submucosa. There is little, if any, destruction of the mucous membrane since the only necessary wounds are the two needle points of entrance. The sinus infection is often secondary to the nasal obstruction, and creates a vicious cycle. The allergy makes the sinus infection bad, and the sinus infection makes the allergy worse. I think there is a tendency to get off on the tangent of allergy, and depend too much on anti-allergic treatment to clear up that which has developed into a surgical condition. I feel that it is rarely necessary to do a radical drainage of the maxillary sinuses in allergic cases. The antromeatal window has proved sufficient to get good results in most of my suppurative antrums in the presence of severe allergic rhinitis. The less we have to do to get our patient well, the better off that patient is.

In closing, I would like to register a plea that our research men try to find out more about the basic pathology or the deep underlying etiology of allergy. A more extended effort should be directed toward endocrinology, bacteriology, blood chemistry, cytology, parasitology, and a closer investigation should be made of the psychoneurotic aspect of this most disturbing ailment. It seems to me that great effort has been made, and considerable has been accomplished, in the direction of symptomatic diagnosis and symptomatic treatment. Literally and figuratively, this is merely scratching the surface.

Dr. F. H. Reuling, Waterloo: The subject which Dr. Reeder has brought to us for discussion is of vital interest to the otolaryngologist, for if we fail to recognize that we are dealing with an allergic individual all of our usual procedures will bring no relief, and if we have a complicating suppurative lesion or nasal deformity which demands surgery we should be careful to explain to the patient that he will not be free of symptoms until he has been successfully treated for his allergy.

The common use of soda, citro-carbonate, citrous fruits and alkali diets for the prevention and cure of colds has produced a mild alkalosis in some individuals, giving them a watery, pale, boggy mucous membrane in the nose which cannot be distinguished clinically from a true perennial allergy. Hence I think we are always justified, as Dr. Reeder suggests, in trying hydrochloric acid or a diet consisting of acid base foods, especially if there is a history of alkalis and alkali base diet.

One may be confronted also with a pure vasomotor rhinitis. These people usually do not have as marked

symptoms as the true allergic individual and the clinical picture of the mucous membrane is not as pale, watery or boggy. Temporary relief can usually be obtained by minute doses of strychnine, such as the elixir of iron, quinine and strychnine. Subsequently we will frequently find that this patient has an endocrine imbalance, more commonly a hypothyroidism.

After ruling out these two main types of wet swollen noses one comes to the truly difficult allergic nose. The fundamental treatment in allergy should come under two heads; first, the avoidance of those substances to which the patient has become allergic; and second, desensitization. The former requires considerable thought by both the patient and the physician, but with proper advice the patient can be of great help by watching the time and place when his symptoms are aggravated. The suggestion of Dr. Alexander, an allergist of St. Louis, has been helpful to me in these cases. He feels that as high as 40 per cent of the proteins to which a person's mucous membrane is sensitive, will not produce skin reactions, and hence he minimizes the importance of skin tests. However, he feels that 90 per cent of all allergens to which any one is sensitive are included in the following short list: feathers, fur, wool, orris root, tobacco, chocolate, wheat and milk. A surprising number of patients will work out their own allergy problem if given this list. An elimination diet is the next step and by that time I think we are all glad to refer the patient to an allergist.

Intranasal medication, packing or suction, adds to the patient's discomfort. The vasoconstrictors, such as adrenalin, ephedrine and benzedrine should be discouraged in the perennial type of allergy, because of habit formation, and because they eventually produce added engorgement of the vessels of the mucous membrane. In the absolutely intractable case there is a place for zinc ionization and possibly the submucous use of diathermy on the inferior turbinate, but the by-products of this type of treatment are almost as bad as the original trouble.

I think we shall all be duly grateful when medical science offers a method of desensitizing against histamine, which produces the reaction in these individuals, or against allergens *en masse*.

THE STATUS OF OPHTHALMOLOGISTS AND OTOLARYNGOLOGISTS IN A STATE MEDICAL SYSTEM*

SUMNER B. CHASE, M.D., Fort Dodge

The purpose of this paper is to visualize the position individuals in our specialty would have if there were instituted in this country, a system of state or socialized medicine. The writer has never traveled abroad, but he has been impressed by the scarcity of information in the literature as to the place which medical men doing similar work to ours would occupy in these set-ups. It will not be the purpose of this paper to cover the subject, as it affects our specialty, in all countries, but rather in those countries which already have in practice a system such as is proposed for this country by the National Social Security Board; that is, a system controlled by the federal government, and financed by compulsory health insurance and federal subsidies. Since the author has not himself traveled abroad, it was necessary to gather material by a review of the scant literature, by correspondence with many individuals practicing our specialty in foreign countries, and by personal interviews with men in our specialty who have returned from abroad. Any inaccuracies will, therefore, I hope be pardoned and corrected in the discussion.

From a broad viewpoint, as far as I have been able to determine, the situation of the head specialists in foreign countries with socialized medicine is much the same as it is in this country. The period of preparation and recognition is, of course, much longer than it is here, averaging about ten years' postgraduate work after the degree of doctor of medicine has been attained, but since none of the state medical set-ups provides for the services of specialists (being limited to those of general practitioners), the specialists have not been affected as much as have those in general practice. As in this country, there are many men in our specialty connected with state and privately owned hospitals, clinics, with teaching and postgraduate services in the centers of population that are large enough to maintain such services. There are also a great many of the low income group of people, and many of not such a low income, who can obtain specialized medical consultation and service without cost. As in this country, these men are usually paid a small salary by the institution and receive the balance of their income from the fees of postgraduate students working under them, and from their private practice, obtained through the acquaintanceship among the general practitioners, from students, and the public at large, by virtue of their experience and prestige in these clinics, hospitals, and teaching institutions.

The men in the communities which do not have these facilities practice much as we do. The work comes directly through the public knowledge of their training and ability, or their acquaintances in general practice, either private or on the panel, or state system, as the case may be. The remuneration for their work varies much as it does in this country, depending upon their clientele. In the main, however, it is much above that of the

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general practitioners who care for the patients under the panel or state system. This is evidenced by the fact that many of the general practitioners desert the state system at the earliest opportunity for the specialties. The proportion of men limiting their practice, to those in general practice, is much higher in countries having state medicine than it is in those without it. The field for men in the specialties is larger, because the men in the specialties are much better trained, and the care that the patients receive by the physicians in the state set-up is markedly inferior. Consequently, even in the low income group, the people go to the panel or state physicians for all of their minor or chronic things, but if they can possibly afford it, they go to the specialists or physicians not in the state system when they have any serious affliction. This results in the fields of all specialties being somewhat crowded, in comparison to this country. The fees obtained vary according to the economic status of the country, being higher than ours with collections very good in the Scandinavian countries, and lower than ours in the British Isles and central Europe. Some form of state medicine or health insurance is in force in all European countries.

Under the panel system in Great Britain, there is one special service; namely, eye service, that is included in certain insurance panels providing there is a surplus left after a certain period; namely, five years. A part of this surplus is paid out, as long as it lasts, for the insured, to eye specialists and optometrists for eye examinations and glasses. The fee allowed for examination is ten shillings, six pence, or about three dollars, for examination, and glasses are furnished on a sliding scale from fourteen to eighteen shillings, or from $3.50 to $4.50 for nickel rimmed spectacles or eye glasses; to thirty-one shillings, six pence, to thirty-six shillings, six pence, for gold filled spectacles, or eye glasses, or Xylo-cover rims, reinforced spectacles. This represents about $7.50 to $8.50. There is an extra charge for bifocals, toric, Crookes' lenses, etc. The foregoing is paid entirely or in part, as the funds allow, with the patient making up the difference if necessary. This represents about "department store" prices with services of an optometrist in this country. It might be well here to quote verbatim from a letter received from the British Medical Association:

"So far as the practice of ophthalmology is concerned, during the past five years there has been a progressive recognition on the part of the public of the advisability of consulting a medical eye specialist for eye troubles but it is difficult to assess this trend of public opinion in precise terms. It is due mainly to a more enlightened outlook in health matters, stimulated by health propaganda, and to some extent to the limited facilities available under the National Health Insurance Act.

"Some explanation of the facilities available under the National Health Insurance Act is necessary. The medical service provided by the Act for all insured persons is limited to a general practitioner service. The cash benefits are administered by Approved Societies and these Societies are allowed to spend a portion of any surplus funds they may have at the end of a quinquennial valuation period on certain 'additional benefits,' of which ophthalmic benefit is one. Every society does not have surplus funds and not all of those with a surplus give ophthalmic benefit.

"Ophthalmic benefit as administered by approved societies consists of a grant in aid for the supplying of spectacles and a contribution towards the cost of sight-testing. Most societies encourage their members to go to sight-testing opticians, and while the member is permitted by regulations to go to a medical eye specialist he does so with the knowledge that he will receive from his society only the fee (5 s.) which would be paid if he went to a sight-testing optician. There are a few societies which make a contribution of 10s. 6d. towards a medical eye examination and their number is slowly increasing. Also if a sight-testing optician considers a medical eye examination to be necessary it is within the discretion of the society to authorize such an examination and it is required to pay a contribution (10s. 6d.) towards the fee of the ophthalmic medical practitioner.

"Ophthalmic benefit has resulted in a very large increase in the number of sight-testing opticians during the past fifteen to twenty years. As an organized body they have endeavored to secure statutory recognition. To this end they promoted a bill in Parliament in 1927 and a Departmental Committee was appointed to consider their claims for a State Register. The British Medical Association gave evidence before the Departmental Committee and was mainly responsible for the Committee's report against the proposal and the rejection of the Bill. It was made clear to the Association, however, that unless provision for an ophthalmic examination was made for wage earners and people of limited means who could not afford an ophthalmic specialist's usual fee, the demand of the sight-testing opticians for statutory recognition could not be resisted. This resulted in the establishment of what is known as the National Eye Service. It is administered by a board consisting of an equal number of rep-

resentatives of the B. M. A. and the Association of Dispensing Opticians, membership of which is confined to opticians who dispense glasses but do not prescribe. I cannot do better than send you a leaflet which explains in some detail the object and procedure of the National Eye Service.

"The general impression in Great Britain is that health propaganda and the National Eye Service have stimulated interest in the practice of ophthalmology. The number of practitioners who are specializing in this subject is increasing, not rapidly, but more so than in any other specialty.

"There have been no comparable developments in otolaryngology but, as you will see from the enclosed proposals for 'A General Medical Service for the Nation,' the Association looks forward to a time when specialist services of all kinds will be provided for insured persons."

There are other arrangements with specialists in our field, much as in this country; that is, tonsil clinics, ear clinics, special school examinations, etc., financed by service or philanthropic groups, in otolaryngology, but they are in no way connected with the state set-up.

A personal communication from N. Sinai, Director of the Division of Hygiene and Public Health, University of Michigan, reads as follows:

"Before the development of the panel system in England beginning in 1912, the method of practice was quite comparable to that in the United States. There were the general practitioners who as far as the lower income population was concerned, provided a service rather typical of that to be found in any populous center. Compared with the conditions in the United States, the fees for office and home services were quite low.

"With respect to the specialists, but little change has taken place in the type of practice except perhaps a tendency to make greater use of specialists' services, because a much larger percentage of the low income groups now have access to the general practitioners. In fact there has been some complaint over what is described as a tendency of the general practitioners to refer too many cases. The references are to the specialists who are connected with Voluntary Hospitals of England. The specialists in these hospitals, in most instances, provide a free service after the pattern of certain of our clinic services in the United States. The health insurance system of England includes only the services of general practitioners as far as medical care is concerned, but during the past few years the British Medical Association has strongly supported wide extensions of the health insurance system to include special and hospital care. In some parts of the country they have developed medically sponsored systems of voluntary insurance which are more inclusive than that of the government program. From the above, I think you may conclude that the position of the specialist in England does not differ greatly from that of his colleague in the United States."

A. M. Simons, assistant director of the Bureau of Medical Economics of the American Medical Association, says:

"We have found very little information on 'The Status of the Ophthalmologist and Otolaryngologist in a State Medical System.' As a matter of fact, the use of the specialist is more or less discouraged in all systems of insurance. This is partly because of the fact that specialists are not included among the physicians regularly employed in most of the insurance systems. When they are called in, in the continental systems which do permit their services to be used, there is usually an additional charge. The insurance administrations oppose every such additional charge.

"In the British system no provision whatever is made for specialists' services. The system itself provides only for the services of general practitioners. If a specialist is called in the patient must pay for his services on a fee basis. The British Medical Association has made quite extensive efforts to provide a low cost 'consultant service' to meet this situation, with specialists agreeing to do work for insurance patients according to a low fee schedule. I have seen some criticisms of such plans, especially of the one in London, which is the largest and usually considered the most successful, on the ground that the best specialists will not serve. The way in which the insured in Great Britain secure the services of a specialist is by being referred to a voluntary hospital or to a county hospital. These services are commonly said to be given free, but, as a matter of fact, heavy pressure is exerted to obtain payment from the persons who go to such hospitals.

"In Germany, Denmark, and some other countries, specialist service is included, with special fee schedules. We have very little information on how this works out. It would appear that even where specialist service is provided most of their work is done in hospitals. I do not know just what arrangements are made for their payment in Germany and in Holland, or just how their fee schedules differ from those of general practitioners in insurance service and from the fees charged by specialists in private practice.

"One fact is quite clear, and that is that the great majority of specialists and the highest class of physicians are not available to insurance patients. The 'Harley Street physician' in London, for example, does not place his name on the insurance panel.

"In France, owing to the fact that the insurance system pays a certain percentage of the medical bill to the insured in cash, all the services are included in the general fee schedule upon which the percentage of the payment made in cash is calculated. This percentage is usually about eighty per cent, varying somewhat between rural districts and Paris. The insured patient may call in any physician, specialist or otherwise, who charges whatever fee he wishes, and the insured then receives eighty per cent—not of the fee which he is charged but of the fee prescribed in the insurance schedule. In practically all insurance systems, including the French, the insured patient cannot go direct to the specialist, but must first be referred by a general practitioner. This is the provision in the French law, at least, but I understand from some of the discussions in the French medical journals that the same tendency of the patient to go direct to the specialist which has developed in this country exists to a certain degree in France.

"The percentage of specialists to the total number of physicians is larger in nearly all European countries than in the United States. Out of 27,103 physicians in practice in Germany in 1933 and 1934, there were 12,328 who were registered as specialists. These were divided as follows:

Gynecology	1,490
Surgery	1,005
Surgery and Gynecology	522
Dermatology	1,724
Urology	122
Internal Medicine	1,914
Neurology and Psychiatry	759
Ophthalmology	1,259
Otology, Rhinology and Laryngology	1,385
Pediatrics	974
Gastro-enterology	196
Orthopedics	223
Surgery and Orthopedics	206
Tuberculosis	229
Stomatology	119
Roentgenology	196
Other Specialties	4

"In the British system, while there is no provision for specialist services, the approved societies, which are the insurance carriers, may apply the surplus, which is determined by a government actuary, to the furnishing of 'additional benefits.' The principal additional benefit furnished is dentistry, but some of them also supply ophthalmologic and otolaryngologic services. So far as ophthalmologic services are concerned it seems that the service is largely confined to the fitting of glasses. From articles that have appeared in the British Medical Journals, it would appear that there is considerable complaint that the work is given to opticians instead of to ophthalmologists, but I have no specific information on the subject.

"There has been very little written on this subject, largely because of the reason already mentioned that the specialists play a very small part in insurance service."

In conclusion, it seems that if the time ever comes, and the writer sincerely hopes it will not, that we have a government controlled state medical set-up in this country, the specialists will be very little affected and experience very little change from the present method of preparation and practice.

THE USES OF BENZEDRINE SULFATE IN GENERAL PRACTICE

Ralph L. Gorrell, M.D., Clarion

Benzedrine sulfate (amphetamine sulfate) is a sympathetic nervous system stimulant which is readily available, non-toxic, non-habit forming and effective on oral administration. This drug restores certain patients to full and normal activity without prejudicing their physical health. It has a number of valuable uses in general practice, which are understood when its pharmacologic action is known.

Guttmann's work has shown that benzedrine (amphetamine) is an adrenalin-like drug which paralyzes intestinal activity and raises blood pressure, but does not affect either the basal metabolic rate or the blood sugar level.

The psychic effects are increased confidence, increased initiative, greater ease in making decisions, speedier thinking without impairment of attention or judgment, and removal of mental fatigue. Intelligence test scores are increased, not lowered, as occurs following alcoholic stimulation. Restlessness and increased talkativeness may be noted. The full effect is obtained in one hour after administration. It should not be given on an empty stomach, since absorption is too rapid.

Often the physician is called upon to make an important decision, perhaps a life-saving one, when he is sleepy, tired and emotionally fatigued. Poor results in obstetric and surgical cases may be traced to this factor of mental fatigue; a diagnostic possibility is overlooked, an operation is postponed until morning or a procedure is carried out due to insistence of relatives. The doctor who is called upon to attend a seriously ill patient, perform an operation or deliver a baby, should take a ten milligram tablet of benzedrine (amphetamine) as soon as he is notified. Within an hour, he will be alert, his mind wide awake, and

his mental and physical skill will be normal. He need have no fear of addiction, because the medicine can be discontinued at any time, without desire for its use. I have records of forty patients who are taking benzedrine (amphetamine) in doses of ten to ninety grains daily (for narcolepsy[2]), who show no sign of addiction despite such use for a period of one to five years. Those patients who improve, voluntarily decrease the dose or try to eliminate it entirely. As with any other stimulant, however, energy is not made; rather it is released and extra rest may be needed during the following twenty-four hours. Certain persons who need, or rather, feel that they need, more than seven or eight hours of sleep, will find that they are able to work longer and with less fatigue than formerly. Benzedrine (amphetamine) should not be taken routinely in the late afternoon or evening, since it tends to interfere with sleep.

Weakness: Fatigue or asthenia is one of the most frequent symptoms encountered by the physician. Probably 50 per cent of asthenic patients on examination will be found to be suffering from a psychoneurosis, anxiety or marital and domestic maladjustment. Such patients wander from physician to physician, receiving such gems of wisdom as, "It's nothing but your nerves," and such medication as phenobarbital and bromides. These functional cases are often marvelously benefited by small doses of benzedrine (amphetamine), five to ten milligrams after breakfast and lunch. Those patients who are not strengthened should be thoroughly restudied to rule out any of the serious causes of weakness, such as carcinoma, diabetes, tuberculosis, hyper- or hypothyroidism, sepsis, malnutrition and hypovitaminosis. The administration of benezdrine (amphetamine) makes the patient feel better while the physician is digging into the cause of the disorder. They speak more freely and often bring out the etiologic factor in their rambling talk. The mental catharsis is, in itself, good treatment.

Depression: A number of investigators attest the value of benzedrine (amphetamine) in depression. Finkelman[3] feels that it is helpful in mild depression, chronic exhaustion and postencephalitic parkinsonism. He agrees with Dub and Lurie[4] that it is rarely of value in the treatment of severe depressions. Since this latter type of case is not treated by the general practitioner, the point is not relevant here. Dub and Lurie feel that they cured a few depressed psychotic patients and benefited the majority during the time the drug was being administered. "The patients were rendered more accessible and cooperative, thus enabling the physician to direct their activities along proper lines." Relapses occurred in many cases as soon as the drug was discontinued. Apparently it did not occur to anyone to continue the administration indefinitely.

Sleepiness: Benzedrine (amphetamine) is almost the perfect remedy for excessive sleep and for narcolepsy. I have several business-men patients who can continue at their business and social life by the intermittent use of the drug. True narcoleptic individuals are just as sleepy after eight, ten or fifteen hours of sleep and need to take the drug regularly as a preventive measure, but such cases are rare compared to the average individual who becomes drowsy occasionally. The sleep mechanism becomes disarranged so that he feels sleepy long before he should. He does not need the sleep, and this is proved by the fact that once the habit is broken, he often stays awake with little or no medication. Dangerous driving and night driving may be rendered less potentially dangerous if the driver takes a moderate-sized dose of the drug, because fatigue and sleepiness, two important factors, are obviated.

Hypotension: Benzedrine (amphetamine) temporarily elevates the blood pressure. When injected intravenously, Reifenstein[5] has found it of great value in the treatment of shock. When given orally, the chronic hypotensive patient experiences a feeling of increased strength and energy associated with an increase of blood pressure which may reach normal levels. The patient who faints, or feels weak and whose blood pressure drops very sharply on sitting up is relieved by large doses, 100 to 150 milligrams daily.

Problem children: Bradley[6] found that the administration of this drug resulted in marked improvement in speed of comprehension, accuracy of performance and a keen desire for accomplishment. Such improvement disappeared the day therapy was discontinued. Again, one wonders why a helpful method of treatment was withdrawn.

An acute hangover following either alcoholic or barbiturate ingestion is well combated with benzedrine (amphetamine). The mild depression is relieved promptly. This drug combined with prostigmin will give better results in myasthenia gravis than will either alone.[5]

Contraindications: The drug should never be given to patients in a state of excitement. Hypertension or coronary artery diseases are contraindications to its use. Guttmann feels that hypochondriac patients should not receive it but gives no reason. In following the progress of narcoleptic patients, some of whom have taken large doses for years, the only effect has been a loss of

weight. Many of these patients are overweight, so perhaps this is a return to normal. Patients with insomnia should never take the drug after noon.

SUMMARY

Benzedrine sulfate (amphetamine sulfate) is of marked value in the treatment of asthenia, abnormal sleepiness, mild depression and hypotension. The physician who is short of rest may be fortified for an emergency night call by a small dose and thus be more efficient.

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RECURRENCE OF UNDULANT FEVER FOLLOWING SULFONAMIDE THERAPY

Mellgren C. Schroeder, M.D., Monroe

This case is interesting in that it was resistant to vaccine treatment, there was an intolerance to sulfanilamide, and there was a recurrence of the fever following chemotherapy with neoprontosil.

CASE REPORT

Mrs. N. H., a white female, forty-two years of age, was first seen December 3, 1938. The patient was a farmer's wife and she was seen at home. She complained of chills and fever of four days' duration, headache and lack of appetite. One week before symptoms began she noticed that she tired easily. The patient was lying quietly in bed. The temperature was 101.8 degrees, the pulse was 96, and the blood pressure was 112/60. The physical examination was essentially negative except for a soft systolic murmur at the apex of the heart and a palpable liver two fingers' breadth below the costal margin. The impression was that this was the "flu", and symptomatic treatment was prescribed. Although there were no complaints, the patient did not respond to treatment, and the temperature continued to range between 100 and 102 degrees. From the fifth day the spleen was palpable on deep inspiration. A blood count done at this time revealed a hemoglobin of 75 per cent; red blood cells, 3,790,000; and leukocytes, 5,300. The urinalysis showed two plus albumin. Blood was drawn for agglutination tests. In view of the continued fever, the palpable spleen, and the leukopenia, it was apparent that we were dealing with a pyrexia of long standing, possibly undulant fever, tularemia, typhoid or paratyphoid "A" or "B" fever. The laboratory reported an agglutination titer of 1:320 for undulant fever on two different occasions. The diagnosis of undulant fever (brucellosis) was then made on the basis of fever for more than one week, a palpable spleen, leukopenia, and a positive agglutination test.

Questioning then revealed the fact that a few years before this time one of the cows in the farmer's herd had aborted a calf. A positive agglutination test for Bang's disease was reported at this time, and the cow was killed, since this was undoubtedly the source of the patient's infection.

In view of the good results that Ervin, Hunt and Niles[1 and 2] reported in the use of mixed typhoid vaccine given intravenously in the treatment of undulant fever, this form of therapy was started. The patient was given an initial dose of 50,000,000 killed bacilli intravenously. The injection was repeated at an interval of five to six days, and the dose was gradually increased to 75,000,000 killed bacilli. Seven injections were given. No untoward reaction was noted from the therapy, but the patient was at no time free from fever during the course of the treatment. The administration of the vaccine was discontinued because it was felt that the treatment had been carried on for an adequate length of time and there was no evidence that a satisfactory result would be obtained. Physical findings remained the same, with a palpable liver and spleen.

Sulfanilamide therapy was next instituted. The patient was given 90 grains (six grams) of sulfanilamide and 60 grains (four grams) of sodium bicarbonate the first day. An intolerance to the drug developed in the form of headache, nausea and anorexia. The next day with the same dosage there was a sharp rise in temperature to 103 degrees. Physical examination did not reveal a cause for the increased pyrexia, and it was thought that the sulfanilamide was responsible. Dosage was continued at the same level, but when the temperature reached 104 degrees on the third day, the drug was withdrawn. The temperature immediately dropped to 100 degrees. A blood count done at this time indicated no further decrease in leukocytes and no evidence of acute anemia. There was no cyanosis, and no jaundice. The conclusion was reached that the elevation of temperature was due to the sulfanilamide. It was unfortunate that since the patient was treated at home, no blood levels for sulfanilamide could be

obtained. On the fourth day following the removal of the drug a test dose of five grains (0.3 of a gram) of sulfanilamide was given. There was no sharp increase in temperature, and the next day the medication was increased to 30 grains (two grams) with 20 grains (1.3 grams) of sodium bicarbonate. Gastro-intestinal intolerance continued and there was still fear of the drug in view of the above experience, so that treatment was changed to neoprontosil, since this drug has a similar action but less toxicity than the popular sulfanilamide. Bannick, Brown and Foster[3] state, "We do not believe that neoprontosil is effective if sulfanilamide fails from the therapeutic point of view; nevertheless neoprontosil appears to be of importance as a substitute when sulfanilamide is not well tolerated."

The patient was given a total of 645 grains (forty-three grams) of neoprontosil as follows: 45 grains (three grams) for eleven days, and 30 grains (two grams) daily for five days. Medication was then discontinued. There was no toxicity to the drug, and the patient was free of fever on the second day. Enthusiasm was running high for the drug because the patient continued to have a normal temperature. Twenty days after the temperature had returned to normal, however, there was an increase and the elevation continued. The temperature had been normal for six days after medication had been discontinued. The patient at this time became discouraged, and decided to try her fortune elsewhere. When last heard from during the first part of May, 1939, she still had fever. She had then been taking vaccine treatment.

DISCUSSION

A number of cases have been reported in which satisfactory results were obtained with sulfanilamide and related compounds. Among them are reports of Stern,[4] Livingston,[5] Traut,[6] Toone,[7] Hall,[8] Haden,[9] and Livingston, Gray and Decker,[10] in this country. Blumgart[11] recorded one case with a cure, and stated that nine European authors reported thirteen cases treated successfully. Francis[12] in England listed two cases in which clinical cures were obtained and the patients were free of symptoms five or six months later. Fraser[13] recorded two patients who were free of fever. On the other hand very few cases have been reported in which there were failures with sulfanilamide and related compounds. In reviewing the literature it was found that Bynum[14] reported six cases in which there was definite failure with sulfanilamide. In three of the six cases there were recurrences, and the other three patients did not respond in any way to the therapy. Neumann[15] in reviewing sixteen cases found only one failure with neoprontosil when it was given orally. Richardson[16] reported one case in which there was a relapse, but after a second course of prontosil the patient became free of fever. Manson-Bahr[17] recorded three patients who suffered relapses, but there was a response after a second course of treatment, in each instance. Thomson[18] reported four patients who were treated with prontosil; two responded immediately to therapy; one had a relapse, but a second course was given and an apparent "cure" was obtained; and the fourth patient developed a cystitis, but responded to appropriate treatment. Gaffney[19] reviewed five cases; three of the patients had relapses, but responded to further treatment.

One can see that the majority of the men are reporting good results with sulfanilamide in the treatment of undulant fever. A few are obtaining relapses, but there is a response to further treatment. The men who are recording failures are definitely in the minority. The number of cases reported has been too small to warrant an opinion on the sulfanilamide group as a therapeutic agent in the treatment of undulant fever, but one must take cognizance of the failures and recurrences, and not become overly enthusiastic about this drug.

SUMMARY

1. A case of undulant fever which was refractory to mixed typhoid vaccine therapy is reported.

2. The undulant fever recurred following neoprontosil therapy.

3. Toxicity to sulfanilamide was manifested by an increase in temperature and subjective symptoms.

4. The literature is reviewed with special reference to reports of failures and recurrences.

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CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

FLUIDS IN SURGICAL PRACTICE*

Sidney E. Ziffren, M.D.
Iowa City

The principal avenues of water loss from the body are the skin, lungs, urine, and feces. In the normal resting individual this will amount to approximately 2,400 cubic centimeters daily.[16] In surgical patients various complications frequently produce an upset in the water balance of the body and may seriously affect the prognosis. Parenteral fluid administration to compensate for these abnormal states is, therefore, of great importance. It is the purpose of this paper to discuss these problems.

In calculating the quantities of fluid necessary we may disregard the loss through the feces which is usually not over 200 cubic centimeters daily. In the normal adult the invisible loss through skin and lungs varies from 1,000 cubic centimeters to 1,550 cubic centimeters daily.[15] In cases of hyperthyroidism or in the presence of fever this quantity may be increased. During actual operative procedures this loss with the accompanying loss of blood may vary from 200 to 2,000 cubic centimeters. The average, daily, postoperative, invisible loss from an adult patient varies from 1,000 to 2,500 cubic centimeters, so that an intake of 2,000 cubic centimeters a day[3] will usually satisfy demands in this regard.

The normal kidney operating at maximum capacity requires 600 cubic centimeters of water daily to excrete the waste products presented to it.[12] The specific gravity of such a urine will be 1.029 to 1.032. Since the ability to concentrate urine is impaired in the presence of permanent renal disease or in kidneys momentarily damaged, a greater quantity of water is necessary to eliminate the same quantity of waste products. Therefore, if the urinary concentration were to fall to 1.010 to 1.014, 1,500 cubic centimeters of urine would be required to excrete a similar amount of excretory products. In order to prepare for such a possible state and to maintain a margin of safety, 1,500 cubic centimeters of water should be the minimum allowed for urinary excretion.[3] We can then state that the water requirement of the average surgical patient is:

Water for insensible loss through skin and lungs	2,000 c.c.
Water for urinary excretion	1,500 c.c.
Total daily requirement	3,500 c.c.

It should be remembered that insensible water loss occurs before the kidney is allowed fluid to excrete its waste products. A very good practical rule is to insist that the water intake is sufficient so that 1,500 cubic centimeters of urine are passed each twenty-four hours, because the urinary output is the real indication of the adequacy of water intake.

There are other losses which may need to be replenished. In some instances patients are brought into the hospital in a marked state of dehydration from persistent vomiting, diarrhea or high fever. They may even have progressed so far as to present nitrogen retention from a paucity of water to excrete waste products. Such an extreme state occurs when an amount of fluid equivalent to six per cent of the body weight[4] has been lost. This amount must be replaced to rehydrate the tissues. In these cases time must be taken to administer a portion of the fluid necessary in spite of the fact that some of these patients urgently require operation. The additional fluid necessary can be calculated as seen by the following figures:

20 Kgm. (44 lbs.) x 6 per cent...1,200 c.c.
60 Kgm. (132 lbs.) x 6 per cent...3,600 c.c.
80 Kgm. (176 lbs.) x 6 per cent...4,800 c.c.

Therefore, if a patient weighing 132 pounds or 60 kilograms is encountered in such a state of dehydration, he will require 3,600 cubic centimeters for rehydration plus his daily requirement of 3,500 cubic centimeters or a total of 6,100 cubic centimeters. Thereafter 3,500 cubic centimeters each day are adequate.

Losses resulting from vomiting, fistulas, and diarrhea must also be replaced. The amount of fluid secreted into the intestines daily is from 750 cubic centimeters to 10,000 cubic centimeters.[16] This is derived from saliva, gastric juice, bile, pancreatic juice, and succus entericus. This fluid is reabsorbed as the materials pass down the gas-

*From the Department of Surgery.

tro-intestinal tract. One can readily see the great losses that may ensue through intestinal or biliary fistulas or in severe diarrheas where reabsorption fails.

In hot weather fluid loss by perspiration requires replacement. Each liter of perspiration depletes the body of a liter of normal saline solution. In many hospitals it is customary immediately to place postoperative patients in an "ether bed" with heavy blankets. The patient loses about 300 cubic centimeters more fluid from such a bed than from a bed with the usual covers but previously warmed with hot water bottles.[3] It is advisable to avoid use of the "ether bed" except in cases of shock, for such a fluid loss is unnecessary.

The sicker the patient the more likely he is to eliminate a smaller amount of urine. One should therefore be conservative about the quantities of fluid administered to sick individuals unless they are dehydrated, and this dehydration is better combated preoperatively rather than postoperatively.

The most commonly used fluid is normal saline. Since each 1,000 cubic centimeters of normal saline contains 8.5 grams of sodium chloride, a patient receiving 3,500 cubic centimeters of normal saline receives about 30 grams of salt. This is approximately twice as much as the patient normally will excrete in twenty-four hours so that an additional strain is placed upon the kidneys. Statistics[6] have been offered to show that patients with a urinary chloride concentration of 0.6 and 0.8 per cent have the lowest mortality rates, while the highest rates occur in those with a concentration of less than 0.1 per cent of chloride in the urine. A simple test has been offered for testing urine chloride. Place ten drops of urine in a test tube and add one drop of a one to five potassium chromate solution; a yellow color is obtained. Then add drop by drop from the same dropper a 2.9 per cent solution of silver nitrate until a permanent and distinct color change to red brown occurs. The number of drops required to produce a change in color expresses in grams the content of chloride per liter of urine. The test has a percentage of error ranging from five to ten per cent and may at times prove very useful. In general, urine should contain from 0.5 to 0.8 per cent of chloride before operation.

The body can utilize 0.85 gram of dextrose (glucose) per kilogram of body weight per hour.[17] Therefore, if an individual weighs 165 pounds (or 75 kilograms) he will utilize 63.75 grams of dextrose per hour without spilling sugar. Translated into terms of a five per cent dextrose solution this means he can utilize 1,260 cubic centimeters per hour, while an individual weighing 132 pounds can utilize 1,000 cubic centimeters. When sugar is found in the urine of a non-diabetic patient following intravenous administration of dextrose solution, decreasing rate of flow into the vein at subsequent administrations may prevent spill by allowing more time for sugar metabolism.

Dehydration is best combated with five per cent dextrose in distilled water except in cases of chloride deficiency such as may be caused by persistent vomiting, intestinal obstruction, constant duodenal suction, or diarrhea. In these conditions saline or Ringer's solution is indicated in order to replace the chloride. Sometimes a gauge of the chloride level may be obtained by determining the plasma chloride, the normal range of which is 560 to 620 milligrams per 100 cubic centimeters. Recent workers[2] have offered a method of calculation for chloride replacement on this basis. They state that 0.5 gram of salt per kilogram of body weight or 0.2 gram per pound of body weight should be administered for each 100 milligrams that the plasma chloride level must be raised to reach normal. For example, if a patient weighs 132 pounds and has a plasma chloride of 430 milligrams it would require 130 milligrams to reach a minimal normal chloride level of 560 milligrams. By formula the number of grams of sodium chloride then required would be:

$$\frac{130 \text{ mgm.}}{100 \text{ mgm.}} \times 0.2 \text{ gram} \times 132 \text{ pounds} = 34.3 \text{ grams}$$

Converted into normal saline (8.5 grams per 1,000 cubic centimeters) this would mean roughly 4,000 cubic centimeters. However, since dehydration concentrates the blood, raising the plasma chlorides, one should not be confused when the plasma chloride reading is normal in individuals who have been vomiting persistently. In such instances clinical judgment must be substituted for actual calculation as to the amount required.

In cases of severe acidosis the use of Hartmann's sodium lactate solution[7] is recommended. Dosages of 30 cubic centimeters per kilogram of body weight will raise the carbon dioxide combining power 13 to 18 volumes per cent. To calculate kilograms from pounds, one merely divides the weight in pounds by 2.2. Solutions of sodium bicarbonate are available commercially and can be diluted to the desired strength.

Edema is commonly seen in surgical patients. There is a critical level of blood proteins at which edema begins to develop.[14] This level in total serum protein is 5.2 to 5.8 grams per 100 cubic centimeters and that for serum albumin is 2.3 to 2.7 grams per 100 cubic centimeters. If a patient loses considerable protein by massive hemorrhage, profuse surgical drainage, marked sepsis, or if he is markedly undernourished so that his blood pro-

teins lie at or below these critical levels, the administration of saline will precipitate edema.[10 and 11] Salt retention leads to edema. Even if patients have no lowered serum proteins, continuous daily administration of 3,500 cubic centimeters of saline will lead to edema.[1] Therefore, when there is a possibility of developing edema, dextrose in distilled water rather than saline should be administered. In patients with edema, dextrose in distilled water will frequently relieve it. The use of concentrated dextrose or sucrose (50 per cent solutions) will serve as dehydrating agents where there is water retention in the cranial cavity or in the viscera.

In shock where blood for transfusion is not available a hypertonic solution should be given rapidly in large quantities. Ten per cent dextrose in saline serves this purpose well. A rapid rate of injection entails no danger of overstraining the heart in the average patient in shock, since the cardiac function is impaired in this condition solely because of the lack of fluid in the vascular bed.

The intravenous route of administration has grown in popularity in the last several years. The ease and rapidity of its use has led many to overlook the advantages that lie in the use of the hypodermoclysis. This is a safe form of administration and the slow rate of flow renders possible good absorption with little danger to the patient. It can be made relatively painless by adding a small ampoule (one to two cubic centimeters) of two per cent novocaine to each liter of solution given. Use is made of the thighs or of the fatty tissue of the axillae. The only danger of the method lies in the possibility of infection. The region used should, therefore, be prepared well with iodine and alcohol or some other suitable antiseptic and protected with draping.

Proctoclysis in the form of the Murphy drip may be used when other routes are not available. Absorption of water and saline by the colon and ileum is rapid. No absorption of dextrose takes place from the colon;[13] therefore, dextrose solutions should not be given by this route. The only two reported cases of human water intoxication took place following proctoclysis;[8 and 9] this is evidence of the great rate of absorption. The complication of water intoxication must be kept always in mind. It gives symptoms of increased intracranial pressure and can be combated by hypertonic salt solution.

A safe rate of intravenous administration is 500 cubic centimeters per hour. It is only necessary to have the fluid at body temperature. If a reaction from an intravenous injection results, the administration should be discontinued immediately. Reactions may be prevented by the proper preparation of fluids and apparatus. A recent paper[5] thoroughly reviews the subject of preparing fluids and equipment.

SUMMARY

1. The fluid requirement of the average surgical patient is 3,500 cubic centimeters daily.

2. The best gauge of an adequate water intake is the daily excretion of at least 1,500 cubic centimeters of urine.

3. In general, a patient with a urinary chloride concentration of 0.5 to 0.8 per cent is a better operative risk than one with a much lower concentration.

4. The methods of combating dehydration, chloride, and acidosis have been reviewed.

5. Following intravenous administration of normal saline solution, edema may arise if the serum proteins are below their critical levels. This risk will be minimized if dextrose in distilled water rather than saline is used.

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THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

LEUKEMIA ASSOCIATED WITH TRAUMA

DONALD C. CONZETT, M.D., Dubuque

The etiology of lymphoblastomas or lymphomatoid diseases is unknown, and both the infectious and neoplastic theories have had their advocates. More recently a possible relationship between trauma and leukemia has received some attention. Thus Yaguda and Rosenthal[1] have reported three cases involving this problem. Their article served to focus our attention on two such patients who had been treated in the hospital. While not conclusive they suggest that trauma may activate a latent leukemia if it is not actually a direct etiologic agent in producing the disease.

CASE REPORTS

Case 1. M. V., a janitor, seventy-five years of age, was admitted on October 29, 1938. He had fallen a distance of six feet from a platform, and had lain undiscovered for an hour. On admission to the hospital he was found to have a complete motor paralysis of both lower and upper extremities except for bilateral preservation of the action of the flexor brachialis. Sensory loss was likewise complete to the diaphragm. He was conscious and rational. X-ray examination disclosed a moderate anterior dislocation of the third cervical vertebra. It was presumed that there had been a severance of the cord produced by the shearing force of the dislocation since no fracture was observed. Light traction was instituted by means of a head halter. A routine blood examination revealed a leukocyte count of 36,000. The following day the count had increased to 86,000. The differential count with 200 cells showed neutrophiles, 26; small lymphocytes, 133; large lymphocytes, 20; eosinophiles, one; basophiles, one; monocytes, eleven; and basket cells, eight. Many of the small lymphocytes were immature. On the third day the cell count had increased to 110,800. At this time the patient became comatose, and his temperature rose to 105 degrees. There had been no change in the neurologic picture. He expired two days later.

The autopsy findings are summarized in the anatomic diagnosis:

Primary:

1. Dislocation and fracture of cervical vertebra
   Edema and degeneration of the cervical spinal cord with complete paralysis
   Right retroperitoneal hemorrhage
   Hypostatic pneumonia
   Bilateral pleural effusion
2. Acute lymphatic leukemia

Subsidiary:

Arteriosclerosis
Fibrosis of the myocardium
Bilateral fibrous pleurisy
Multiple fibrous peritoneal adhesions

Case 2. E. H., an unmarried woman, forty-eight years of age, was admitted July 6, 1933. The day before admission she had fallen while dancing and was unable to arise because of pain in the right hip. On admission to the hospital an x-ray examination revealed an intertrochanteric fracture of the right femur. Because of her apparent good condition, the fracture was immediately reduced and maintained in a Roger Anderson splint. Later that day a routine blood examination revealed a leukocyte count of 188,000. The next day the count was 186,400, and 95 per cent of the cells were myelocytes or premyelocytes of the various types. The pathologist concluded that it was a chronic type of myelogenous leukemia. Further examination of the patient disclosed a marked increase in the size of the spleen. The liver was easily palpable. X-ray therapy was instituted, and on August 18, the count had dropped to 112,000. The patient left the hospital on August 28. One week later the white blood count had fallen to 41,000. In early October the apparatus was removed and x-ray examination showed excellent bony union. She had an uneventful recovery and resumed her work as a waitress. Thereafter she was under the care of an internist. In May, 1936, the white blood count was 82,800 with 85 per cent myelocytes or premyelocytes. Because of the patient's failure to cooperate she was given only an occasional x-ray treatment and she died three years after the original admission. No autopsy was obtained.

In each of these cases but especially in the first one, trauma apparently stimulated the rapid development of leukemia. If we could know that the blood pictures were normal before the injuries, each case would furnish strong evidence that the trauma was etiologically important. Only under especially fortuitous circumstances will such knowledge be available. However, each case does indicate an important relationship between trauma and the development of each type of leukemia.

DISCUSSION

The relationship of trauma to leukemia has been recognized for almost a century. Virchow[2]

cited a case of myelogenous leukemia associated with bony injury in 1845. Occasional scattered cases were reported, and in 1930 Lewsen[3] had collected forty cases from the literature. The question assumes importance today, however, because of the possibilities arising in compensation cases. Should we consider leukemia to be a predisposing factor to the injury and thereby make a case against the injury as the cause of death, or should we designate the leukemia a complication to the trauma? The literature indicates that there is a difference of opinion regarding the exact relationship between trauma and the development or appearance of the leukemic symptoms. In the majority of the cases reported, the patient was in apparent good health at the time of injury. In our two cases the patients were working at the time of injury and considered themselves free from illness. Of course this could be true in the earlier stages of leukemia which might be discovered only by routine blood examination. Some writers assume that a leukemia developing as late as five years after trauma might well claim association with the injury and the resulting disease. To arbitrate this situation Liniger[4] has set up as a standard the following criteria:

1. The injured individual must have been well and feeling capable of work up to the time of the accident.

2. A suitably severe accident must have taken place, with the essential objective and subjective signs of injury.

3. The time at which the development of sickness occurs and that of the accident must bear a relation; that is, there must be bridging symptoms.

SUMMARY

Two cases in which trauma undoubtedly aggravated a pre-existing but quiescent leukemia have been reported. In one case this aggravation resulted in the development of a definite, full blown leukemia. In the other, injury to the spinal cord caused death before the course of the leukemia became evident. This is in agreement with recently published opinions of Yaguda and Rosenthal who believe that trauma causes rapid progression of a previously latent leukemia rather than being a direct etiologic factor. The importance of the full understanding of this relationship in compensation cases has been indicated. In judging it the criteria suggested by Liniger should be followed.

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POWESHIEK COUNTY PLANS SPECIAL MEETING

"Management of the Pneumonias" is the title of a film which will be presented by the Lederle Laboratories at an open meeting of the Poweshiek County Medical Society in the Grinnell High School auditorium on the evening of Tuesday, September 26, at 8:00 p. m. This film, which will be personally presented by Dr. F. E. Schmidt of the Lederle staff, was prepared by Dr. Jesse Bulowa from clinical material in the New York City hospitals, and includes a very complete picture of the diagnosis and treatment of the pneumococcus pneumonias. Neufeld typing and other laboratory procedures as well as consideration of sulfapyridine treatment will be covered. Dr. Schmidt has cooperated with the Iowa State Pneumonia Program for several years past. It is the understanding of the Poweshiek County officers that this will be the only presentation of this film in central Iowa this year. Special invitations have been issued to six adjoining counties but all doctors who are interested in pneumonia will be welcome.

P. E. Somers, President.
C. E. Harris, Secretary.

MEDICO-MILITARY INACTIVE STATUS TRAINING, MAYO FOUNDATION

The eleventh annual Inactive Status Training Course for Medical Department Reservists of the army and navy will be held at The Mayo Foundation, Rochester, Minnesota, October 8 to 22, 1939.

During the past ten years this school, the first of its kind, has been remarkably successful. The general plan of former years will be followed. Special work in clinics and hospitals will be offered during the morning hours for those asking special assignments. Presentations of carefully selected subjects in military medicine are scheduled for the morning, afternoon, and evening hours.

All Medical Department Reservists are eligible for enrollment. Approved applicants will be enrolled upon the recommendation of the Surgeon of the Seventh Corps Area or the Surgeon of the Ninth Naval District. Applications should be made at an early date and should be forwarded through the respective Reserve headquarters of the officers concerned.

STATE DEPARTMENT OF HEALTH

Walter L. Bierring

Physicians Requested to Report Occupational Disease

PAUL J. HOUSER, Industrial Hygiene Engineer, Iowa State Department of Health

In the bulletin of the Iowa State Department of Health for the first quarter of 1939, the subject "Industrial Hygiene" is discussed and a program for the control of occupational disease is explained. Dusts, gases, vapors and fumes are associated with many occupations and are responsible for various occupational diseases and ailments. Statistical studies have shown that the life expectancy of the industrial worker is several years less than that of the worker otherwise engaged, and the incidence of tuberculosis, pneumonia and the degenerative diseases is materially higher among industrial workers, causing an increase in the mortality and morbidity rates of the general population. The health hazards of an industrial environment are grouped as follows:

A. Those caused by contact with harmful substances.

Dusts; gases, vapors, fumes, mists; solids and liquids; infective materials.

B. Those caused by harmful conditions.

Excessive heat, cold, or moisture; excessive light; compressed air; confined air; confined positions (nerve and muscle strain and fatigue; the "occupational neuroses"); eye and ear strain; irritation of the skin.

Silicosis, poisoning from gases and vapors such as carbon monoxide, benzol, sulfur dioxide, and organic chemical vapors arising from paints, lacquers, enamels, metal cleaning agents, etc., are briefly discussed in the bulletin, and examples are given of how and where they may occur.

Because of the numerous materials used in the manufacturing, mechanical and mining industries and the variety of toxic effects which they have, it is essential that a complete occupational history be taken of every patient engaged as a gainful worker in this class of pursuit. This history should not end with the mere record of the patient's occupation but should include the actual operation, materials handled, period of time engaged and other such pertinent data which are of value in indicating whether some industrial process is responsible for the injury. It is believed that many cases of chronic injury can be traced to improper working environments.

The Department has sent out a copy of the rules and regulations containing a schedule of reportable occupational diseases in the state. Likewise, report blanks for occupational disease cases have been distributed and the cooperation of the medical profession is asked in recognizing these diseases and reporting them to the Department. A program of rendering service to industry rather than enforcing police power has been set up in an effort to increase the life expectancy of the industrial workers and reduce the mortality and morbidity rates of this group.

ANOPHELINE MOSQUITOES AND MALARIA IN IOWA

Malaria Case Reports

More cases of malaria have been reported to the State Department of Health in 1939 than in any previous year on record. Among twenty-nine cases reported by attending physicians and by the State Hygienic Laboratory thus far this year, one case was notified in June, twenty in July and eight in August. Most cases have been reported from some of the counties bordering the Mississippi river, notably Dubuque, Clinton, Scott, Muscatine, Des Moines and Lee counties. Malaria has also been reported from the following counties: Cherokee, Fayette, Howard, Ida, Iowa, Jefferson, Marshall, Tama and Washington.

Investigation of Cases

Field investigation of some cases of malaria was made early in August in eastern Iowa with the aid of Mr. J. A. Rowe, Assistant Entomologist and Research Assistant, Department of Zoology and Entomology, Iowa State College, Ames, Iowa. Malaria had been reported from Clinton county, the patient being a filling station attendant with

occupation and residence in a marshy area five miles south of Low Moor. The patient had not been out of the county during several months prior to illness. Collections were made, by Mr. Rowe, of mosquito larvae taken from a narrow pond along the east side of Highway No. 61. Floating plants consisted chiefly of algae and lemna or duck weed. Larvae and pupae of anopheline mosquitoes were fairly abundant; the immature forms when reared proved to be Anopheles quadrimaculatus and Anopheles punctipennis.

Two children in a Wilton Junction home (Muscatine county) had malaria in July. Dates of onset of symptoms in the two patients differed by about ten days. The children had not visited away from the county for some months preceding illness. Careful search in the basement of the dwelling and elsewhere in the building, failed to show adult mosquitoes at day resting. However, larvae and pupae of A. quadrimaculatus and A. punctipennis were collected from pond margins to either side of Highway No. 38, two miles southwest of town. Larvae of culicine mosquitoes were likewise fairly abundant. Among floating plants, blue green algae were plentiful, duckweed less so. Many larvae were found among reed cuttings placed by muskrats, where the water was quiet and free from ripples.

A resident of Muscatine had chills and fever and was diagnosed as having malaria. The patient had played regularly at a barn dance hall ten miles south of town, during the weeks preceding illness. Mosquito larvae were collected from the borders of Muscatine slough, in Louisa county and close to the barn that had served as a dance hall. Larvae of culicine mosquitoes were abundant and those of anopheles were fairly abundant. The anopheline larvae were reared and in the adult stage, were identified by Mr. Rowe as A. quadrimaculatus.

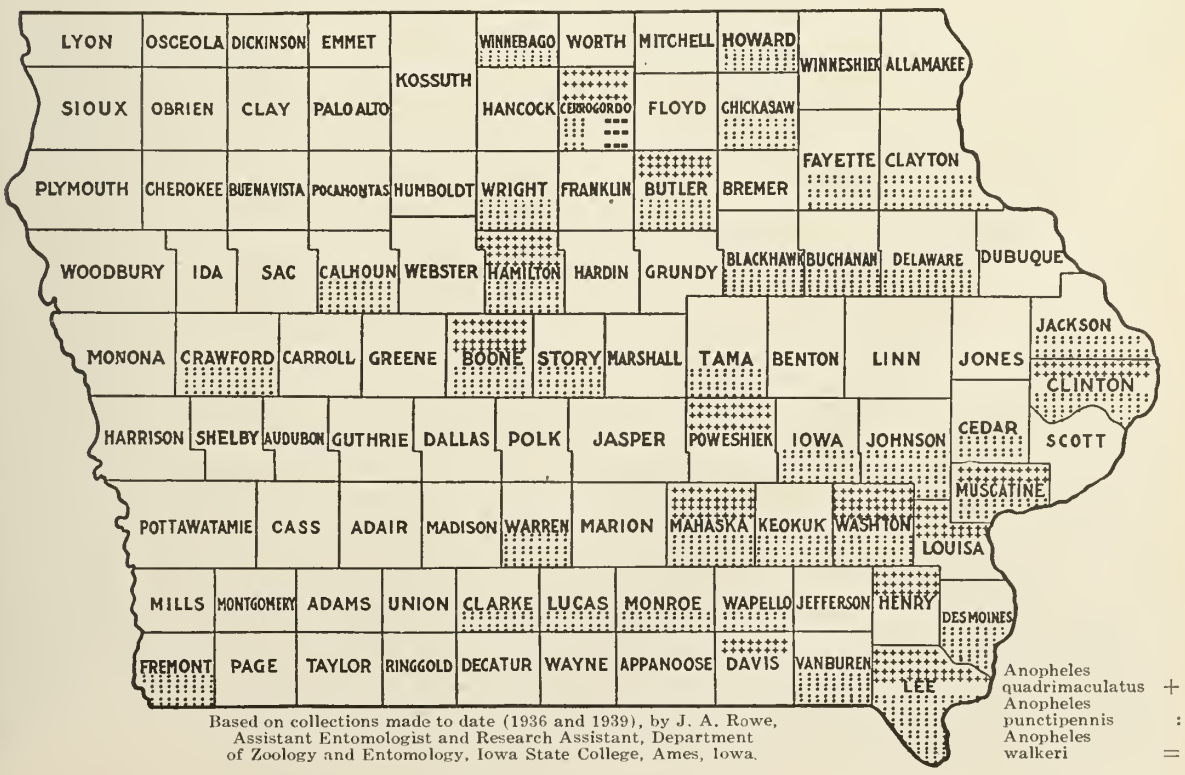
Some Results of Mosquito Survey

In 1936 and again during the season of 1939, Mr. Rowe conducted and has continued a mosquito survey in many of the counties in Iowa. Some of the findings are presented in the accompanying spot map (Figure 1). It will be noted that to date Anopheles quadrimaculatus has been found in thirteen widely separated counties and Anopheles punctipennis in thirty-five counties. It seems altogether probable that anopheline species, particularly A. quadrimaculatus, an important vector for the spread of malaria, will be found to occur in counties in all sections of the state.

Reporting of Cases

It is desirable that all malaria cases be reported to the State Department of Health at the time of occurrence, and that diagnosis, insofar as possible, be based on the finding of plasmodia, blood smears having been prepared prior to the institution of specific antimalarial therapy.

DISTRIBUTION OF ANOPHELINE MOSQUITOES IN IOWA



Based on collections made to date (1936 and 1939), by J. A. Rowe, Assistant Entomologist and Research Assistant, Department of Zoology and Entomology, Iowa State College, Ames, Iowa.

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A NEW THERAPEUTIC PROBLEM

In contrast to therapeutics of only a score of years ago, present day therapy presents a complex problem. The individual physician has difficulty in keeping informed of the rapid additions to therapeutic knowledge and the rational application of new methods of treatment. In addition to the orthodox endocrine products, one must decide on the efficacy of an extract of the urine of pregnant women, or the serum of pregnant mares. Instead of the simple A, B, C, and D's of the vitamins, one must know the whole alphabetic order.

The tremendous scope of modern medical knowledge gave impetus to specialization. The expert in a specific field of medical practice is naturally circumscribed in his view of an individual case; the cardiologist, the gastro-enterologist, or the urologist cannot approach the problem of abdominal pain without an element of bias. His training and the character of his practice have made him particularly conscious of the diagnostic possibilities of his chosen field of medical endeavor. This attitude has been a necessary and advantageous development during the past decade.

However, in view of this trend to specialization, it seems appropriate to sound a word of warning so that our attention to minute details and restricted areas does not overshadow our concept of the picture in its totality. The human organism is a biologic unit, composed of many integral parts, all intimately related, and the performance of parts of the organism can be understood only in terms of the functioning of the total organism. Moreover, this organism has the additional complexities of intellect and emotion, and because of these two important and extremely variable factors, the problem of an individual case cannot be solved by a limited view of the biochemical functions. In the therapeutic application of any product, and this is particularly true of endocrine preparations designed to correct an individual variation in biochemical function, one may obtain the desired result with a specific response, and at the same time produce an adverse effect on another unit of the organism. In the treatment of the individual and in the evaluation of any therapy, the collective functioning of the organism must be taken into consideration, and the success of any given treatment will vary in direct proportion to the understanding and comprehensive viewpoint which the individual practitioner can bring to the problem at hand.

The clinician must look upon the patient as an entity and, in the zealous investigation of his own particular field, not fail to appreciate that he is treating a patient and not a condition. In accepting this thesis we assume a huge task—but surely a worthy one.

SULFANILAMIDE AND SULFAPYRIDINE IN POLIOMYELITIS

With the advent of the infantile paralysis season, the attention of the physician is naturally attracted toward the possibilities of therapy in this dread disease. Convalescent serum has been shown to be of questionable value, although some clinicians still recommend its use in large doses.

Because of the wide uses which have been demonstrated for sulfanilamide, and more recently for sulfapyridine, it might be expected that these drugs would exert an effect in poliomyelitis. That such is not the case, however, is suggested by the animal experimentation conducted by Toomey and Takacs,[1 and 2] who a year ago demonstrated that sulfanilamide, when used to prevent experimental poliomyelitis in Macaca rhesus monkeys, was without effect.

It was thought that another chemotherapeutic agent, sulfapyridine, might be of value. Each of eight Macaca rhesus monkeys, weighing from three to five pounds, was injected intracerebrally with 0.5 of a cubic centimeter of a one per cent purified virus suspension of Flexner's M. V. strain. Two days later, four of the animals received 0.5 of a gram, each, of powdered sulfapyridine, twice daily, for from seven to ten days when massive paralyses appeared. A small amount of water was added to 0.5 of a gram of the drug and the mixture shaken to keep the sulfapyridine in suspension. The mixture was introduced through a fine catheter into the posterior nasal pharynx. In this way, the animal swallowed the material without vomiting.

All eight monkeys developed poliomyelitis with-

in seven to ten days after the injection of the virus. The sulfapyridine level in the bloods of the animals was variable, ranging from a low of 1.2 milligrams to a high of 8.2 milligrams per 100 cubic centimeters.

The authors conclude that sulfapyridine is of no value in preventing the production of experimental poliomyelitis in Macaca rhesus monkeys which have been intracerebrally injected with poliomyelitis virus.

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ON COLLECTION AGENCIES

Periodically there come to the central office, complaints from members of the society that they have been victims of fraudulent collection schemes. Obviously it would be unwise to mention specific companies and names, thus putting the society in a vulnerable position as regards any legal action, however justified we might feel ourselves to be.

There is one thing we can do—one thing we *have* done, time after time. We again call the attention of our readers to the service which the Medical Economics Committee renders the members in this respect. Any reputable, bona fide collection agency which wishes to operate in Iowa can secure the approval of the Iowa State Medical Society by applying to our Medical Economics Committee, and furnishing copies of their contracts and lists of previous customers. After a complete investigation has been done, and if the organization measures up to our requirements, the Committee issues cards of approval for all salesmen to use in calling on physicians. These cards must be renewed each year, and if any complaints are received they are thoroughly investigated. Any physician when he is approached by a salesman bearing this card of approval for the current year can be reasonably sure he is dealing with an ethical collection agency. If there is any doubt as to the authenticity of the approval, the small investment of a telephone call to the central office will pay big dividends. Not only does a physician lose actual cash in transactions with dishonest firms; he often loses the respect and good feeling of patients who are not dealt with tactfully by representatives of collection agencies.

The services of the Medical Economics Committee were inaugurated solely for the purpose of protecting our members against unscrupulous or poorly managed concerns, and we believe the time spent in the necessary investigations has been appreciated. However, if the recommendations of the Committee are not followed, we must believe that our efforts in this direction have been of no avail. Once again, therefore, we urge every physician to remember these facts, and to make use of the central office and the Medical Economics Committee. We have the facilities, but it is definitely the responsibility of the individual practitioner to request the information.

A. M. A. ISSUES PUBLICATIONS

Recently the Journal received from the Bureau of Medical Economics of the American Medical Association, two publications compiled by the Bureau which contain information every physician should know. One of the publications entitled "Factual Data on Medical Economics" is a bulletin of some sixty odd pages which contains interesting data on the number and distribution of physicians in the United States; the number of hospitals and the percentage of bed occupancy; vital statistics both here and abroad; the trend of maternal and infant mortality rates; sickness insurance in Germany; provisions of national sickness insurance systems; and finally a chapter on medical services and economic status. The other publication, "Organized Payments for Medical Services," is a report on the various types of plans which state and county medical societies have organized or proposed for the distribution and payment of medical services. Included are chapters on the care of the indigent, farm security administration, group hospitalization, and medical care arrangements organized by medical societies.

The Bureau has requested the Journal to assist in extending the scope of the information contained in these two booklets by as much publicity as possible. This the Journal is glad to do, and selected portions from the booklets will be published serially. By preserving each copy readers will have, at the end of the series, a ready reference to information of the sort that is so needed today by both the profession and the public. Some of these articles will be abstracts, but the material contained in this editorial is a verbatum report of the chapter on Care of the Indigent, since we feel there is much new information therein which will be of interest to our readers.

CARE OF THE INDIGENT

The term "indigent" designates those who have been declared by some public or private investigating body as being incapable of providing themselves with the essentials of life. Custom has decreed that medical care is among the essentials to be provided not only for those who are in need of public relief for

food, clothing, and shelter, but also for those who, even if they are able to provide these necessities for themselves, do not have sufficient additional income with which to meet the emergencies caused by sickness. This latter class of persons has been designated as "medically indigent." The following definition of this group was suggested at the Special Session of the House of Delegates of the American Medical Association in September, 1938:

"A person is medically indigent when he is unable, in the place in which he resides, through his own resources, to provide himself and his dependents with proper medical, dental, nursing, hospital, pharmaceutical, and therapeutic appliance care without depriving himself or his dependents of necessary food, clothing, shelter and similar necessities of life, as determined by the local authority charged with the duty of dispensing relief for the medically indigent."

The principal source of medical care for the indigent, at all times has been the gratuitous medical services furnished by physicians in private practice. It has been estimated that such care in the United States in recent years has been about $1,000,000 a day, as measured by the fees which would usually be charged for such services. Some local investigations seem to indicate that the amount of service so given might reach an even larger sum.

In the city of Camden, New Jersey, it was estimated that during the year 1935 physicians gave free services amounting to $926,250. In Los Angeles County the conclusion of a study was that the "members of the Los Angeles County Medical Association give annually in private practice services worth $3,120,000." In addition, the added expenses of services given in hospitals and clinics raised this sum, according to the report of the study, to the "staggering figure" of $31,490,700 in 1930.

In Westchester County, New York, it was estimated that, reckoning a full day's medical attendance at $3, a major operation at $100, a minor operation at $25, an obstetrical delivery at $50, and a treatment or consultation in the dispensary or outpatient department at $2, "the medical staffs of Westchester County Hospitals have contributed in one year's service" medical care considered to be worth $1,857,873.

The Philadelphia County Medical Society in 1932 estimated that the "contribution in free work by Philadelphia physicians amounts to $20,000,000 a year."

A Special Committee on the Distribution of Medical Services in Wisconsin stated in 1932 "that the medical profession of Wisconsin is probably giving this year in uncompensated service to the indigent something more than eight millions of dollars."

The report for 1938 of the Health Security Administration of Washington, D. C., a central hospital routing agency financed by the Community Chest, states that a conservative estimate of the contribution of free medical services rendered by physicians in hospitals was in excess of $12,000,000 during the four years of operation of the agency.

PUBLIC DUTY TO CARE FOR THE INDIGENT

The medical profession does not complain of this gratuitous service; neither does it boast of it. It is accepted as compliance in part with that principle of medical ethics which says: "The poverty of a patient and the mutual professional obligation of physicians should command the gratuitous services of a physician." The medical profession has always recognized that this obligation to provide medical care is shared by the profession with the entire body of society, and has urged that the public, through whatever agencies it may choose, undertake at least its share of this obligation. On this point, the House of Delegates of 1930 said:

"(a) The physician is no more obligated to provide for the care of the indigent sick than his fellow citizen.

"(b) In mutual charitable undertakings for the care of the sick, each citizen contributes what he has: the layman, physical necessities; the physician, professional skill. But each has a right to protect himself from exploitation, and to judge of the merit of the recipients of his bounty."

The component units of the American Medical Association have cooperated with the public in those plans to supply medical care to the indigent that did not involve such infractions of the principles of good medical practice as to destroy or harm the medical service.

DEVELOPMENTS SINCE 1930

Until the industrial debacle of 1929, the public contribution to the supply of medical care for the indigent was principally through salaried county, city, or township physicians. The evils of this method have been continuously pointed out and denounced by medical societies. Such physicians, in spite of the exceptions to almost any rule applying to human beings, were often of an inferior type, selected for their political affiliations and then overworked and underpaid. They were outstanding examples of the sort of "state medicine" that is condemned in the resolution quoted in the previous chapter regarding the giving of medical treatment to any section of the general public. This type of medical care for the indigent has been characterized by Joseph W. Mountain, Surgeon, United States Public Health Service, as follows:

"In some of our political subdivisions the officials, feeling that they should do something, but in an economical way, establish the job of poor doctor, awarding it to the lowest bidder. They get exactly what they bargain for, a poor physician who renders poor medical service to a limited number of the poor —a sort of three graces in reverse."

Like most political essays into the field of the practice of medicine, the county doctor system tended to injure the patient, the public, and the practitioner. One of the latter, speaking of his own experience as a county physician, supplemented by reports from other physicians occupying similar positions, says:

". . . . I do not hesitate to make the statement that county physicians are subject to impositions so gross as to be intolerable. Emergency calls are made in scores of instances where no emergency exists, many unnecessary night calls are made and these for long trips over bad roads to places which it would be difficult to reach even in the daytime, only to find there had been little or no occasion for such a call. Many times I have been asked to sit down and wait while some one goes to the neighbors to call the patient. Why is this? Just because it is free."

Any method or system of distributing medical care which disregards quality of service, especially for the indigent, is dangerous to the future of medicine and destructive of good public policy. One of the most important elements of good medical care is the close, personal, confidential relation between the patient and the physician of his choice. Suspicion, deceit, fear of betrayel of confidence, or any form of compulsion on either side are destructive of this relation and of the results which should follow it. Contract practice is one of the methods which interferes with mutual confidence and the freedom of the patient to choose his own physician. This interference inevitably tends to destroy the value of the information necessary for good medical care. Furthermore, contract practice imposes on the poor this destructive restriction of choice of a physician chiefly because of their economic status.

The logical procedure, before attempting to develop a community health program, or even a health program for the indigent, would be to make a diagnosis of the community needs, that such local resources as are available may be utilized with the utmost efficiency for the benefit of all. Included in this diagnosis should be an appraisal of the methods now being employed for the distribution of medical care. Communities might well ask if present systems of distributing these services are conserving resources by coordination of investigation, by elimination of duplicating services, and by a periodic revision of the standards of eligibility for relief in accordance with fluctuations in the costs of living. It is not enough to know how many persons need medical care—the number of those who need and desire medical services must also be determined. In all this stocktaking, one item should never be overlooked; that is, the physicians of the community are the only ones who by training, licensure, and experience are competent to give medical service, and it is to the county medical societies and individual physicians in private practice that communities should look for advice and assistance in arranging medical services for any group.

The Board of Trustees of the American Medical Association recently adopted resolutions designed to assist and encourage state and county medical societies to collect information concerning the prevailing need for medical and preventive medical services and to formulate preferable procedures to supply these needs in accordance with established policies and local conditions.

Federal Emergency Relief Administration

By 1933 the number of people in need of medical care and all other forms of relief had become so large as to overburden the resources of the medical profession as well as of private philanthropy and local governmental bodies. The criticisms directed by organized medicine against contract doctors were so thoroughly supported by factual data and the position itself had so nearly ceased to be a political asset that there was little objection in most cases to its abolition. With the revival of local financial resources, there are now signs of renewed attempts to restore contract poor doctors as a part of the medical machinery of relief.

The entrance of the federal government into the administration of relief in 1933 not only altered fundamentally the whole organization of relief, medical or otherwise, but also established new patterns of administration and started new trends of development, the outcome of which are as yet not visible.

The Federal Emergency Relief Administration undertook to provide at least a minimum of medical care for those whose indigency was proved. Since it was then and always will be impossible to set up any form of medical care in which physicians will not be the most essential factor, the Federal Emergency Relief Administration sought the cooperation of the American Medical Association in formulating and operating a plan of medical care. The result of this cooperation was the onetime well-known "Rules and Regulations No. 7." It should be understood that while the American Medical Association, when asked for assistance by public authorities, has always done the best that it could to contribute to the formulation of workable plans, this does not blind the profession to defects. The first section of these Rules and Regulations laid down a policy which was not only responsible for whatever degree of success was attained under the plan but which also fixed a pattern, the outlines of which had long been evident, for all future schemes of medical care. This section reads:

"1. Policy—A uniform policy with regard to the provision of medical, nursing and dental care for indigent persons in their homes, shall be made the basis of an agreement between the relief administration and the organized medical, nursing, and dental professions, state and/or local. The essence of such a policy should be:

"(a) An agreement by the relief administration to recognize within legal and economic limitations, the traditional family and family-physician relationship in the authorization of medical care for indigent persons in their homes; the traditional physician-nurse relationship in the authorization of bedside nursing care; the traditional dentist-patient relationship in the authorization of emergency dental care; and

"(b) An agreement by the physician, nurse (or

nursing organization), and dentist to furnish the same type of service to an indigent person as would be rendered to a private patient, but that such authorized service shall be a minimum consistent with good professional judgment, and shall be charged for at an agreed rate which makes due allowance for the conservation of relief funds.

"The common aim should be the provision of good medical service at a low cost—to the mutual benefit of indigent patient, physician, nurse, dentist, and taxpayer."

The degree to which the Federal Emergency Relief Administration plan succeeded in supplying even the fundamental elements of good medical care to those who came within its scope is measured almost exactly by the extent to which this policy was carried out, although in some places it was disliked and occasionally it was sabotaged by persons not a part of the medical profession. Efforts were made in some areas to reinstate contract physicians or to turn the administration over to politicians and thereby to hamper the application and maintenance of those professional standards of medicine which are essential to the protection of the health of the public.

The Federal Emergency Relief Administration as an attempt to establish a national pattern of medical care for the indigent was not wholly successful because a single, uniform pattern of medical practice under such widely diversified conditions is an impossible objective. In spite of the fact that the plan did permit considerable local flexibility, a careful study of its workings throughout the country will disclose that in some states the local variations were so extensive that little was left of the original plan while other states did not even attempt its introduction.

Other elements which affected arrangements for medical care for the indigent were of almost equal importance. Medical societies recognized that changing conditions were making it impossible for the gratuitous service of physicians alone to meet the situation. Centers of poverty in large cities and in the "depressed regions" of farming sections had arisen in which the total resources in the locality were insufficient to supply to the indigent all the necessities of life, including good medical care. Physicians in such districts found it increasingly difficult to derive a living from a diminishing number of self-supporting people and at the same time carry, without any remuneration, the burden of medical care for the indigent population. However willing the great body of physicians might be to give their share of gratuitous service, this localization of population groups with very low incomes or no income at all, made it impossible to distribute the burden of medical care in any equitable manner.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Iowa Interprofessional Association August 20, 1939

The Iowa Interprofessional Association met at the Kirkwood Hotel in Des Moines Sunday, August 20, 1939, with the following members present: Walter Meads, George W. McChane, Denny Brann and R. J. Allen from the Iowa Pharmaceutical Association; E. H. Ford, F. W. Pillars and F. N. Ralston from the Iowa State Dental Society; Robert D. Wall and H. C. Smith from the Iowa Veterinary Medical Association; R. D. Bernard, Fred Moore, F. P. McNamara and J. H. Bruce from the Iowa State Medical Society; and Alma Hartz, Leta Seaman, Mary Fitzpatrick, Marianne Zichy, Fern Hemstreet, and Sara O'Neill from the Iowa State Association of Registered Nurses.

The meeting was called to order by the president, R. D. Bernard, and the minutes of the previous meeting were approved. The president reported that there were sixteen counties which were non-responsive to the idea of interprofessional organizations, seven counties which attend meetings in surrounding counties, and eighteen counties in which preliminary organization work has been done, and which may be organized during the fall. The remainder of the state is fully organized. Mr. Meads gave the treasurer's report, listing assets of $588.75 for the year, with disbursements of $421.21, leaving a balance of $167.54 on hand. Mr. Brann asked for a report of expenditures made directly by the Iowa State Medical Society in addition to the above. This was estimated to be $589.20.

A discussion then followed on the two state meetings and subjects for discussion at the 1940 state meeting; suggestions were also made for county society programs. It was decided that speakers on the state program should be from within the ranks of the five professions. Suggested topics for county society programs were as follows: The State Board of Health, with panel discussion of its objectives; the Iowa Planning Board; the Iowa hospital insurance plan; drugs; and the drinking driver. Election of the Executive Council for 1939-1940 followed, with Miss Seaman chosen to represent the nurses, Dr. Ford the dentists, Dr. Moore the physicians, Mr. McChane the pharmacists, and Dr. Scott the veterinarians. Of this group, Mr. McChane was elected president, Dr. Ford, vice president, and Miss Seaman, secretary-treasurer. A change in the Constitution and By-laws, changing the semi-annual meetings in June and December to an annual meeting the second Sunday in September, with election of officers on that day, was read and left to be acted upon next year. A program committee was appointed to act with the Iowa State Dental Society in procuring speakers for the 1940 meeting, and the different groups suggested the names of possible speakers.

Meeting adjourned at four-thirty.

SPEAKERS BUREAU ACTIVITIES

POSTGRADUATE COURSES

Early in August, the Speakers Bureau Committee compiled a questionnaire on postgraduate medical education which was forwarded to the members of the Committee on Postgraduate Medical Education in each councilor district. The questionnaire was especially designed to evoke the frank and unbiased opinions of this committee pertinent to the past and future operation of the Speakers Bureau in its presentation of postgraduate programs. The response to the questionnaire has been excellent, and in most instances, additional comments and criticisms were submitted which have augmented our knowledge of postgraduate education procedure for the individual councilor districts.

As a result of the survey, the following courses have been scheduled for fall. These programs are tentative, and complete outlines will appear in the next issue of the Journal.

Second Councilor District
Algona, Iowa
M. G. Bourne, M.D., Local Chairman

Oct. 2 The Acute Abdomen, Arnold Jackson, M.D., Madison

Oct. 9 Treatment of Leukorrhea, E. D. Plass, M.D., Iowa City

Oct. 16 Diagnosis and Treatment of Neuroses, Clarence Van Epps, M.D., Iowa City

Oct. 23 Endocrinology, Lester R. Dragstedt, M.D., Chicago

Oct. 30 Fractures, Fremont A. Chandler, M.D., Chicago

Nov. 6 Pediatrics, Roger L. Kennedy, M.D., Rochester

Third Councilor District
Sheldon, Iowa,
W. R. Brock, M.D., Local Chairman

Oct. 3 The Acute Abdomen, Arnold Jackson, M.D., Madison

Oct. 10 Treatment of Leukorrhea, E. D. Plass, M.D., Iowa City

Oct. 17 Common Disorders of the Upper Abdomen, (Essayist to be announced)

Oct. 24 Endocrinology, Lester R. Dragstedt, M.D., Chicago

Oct. 31 Fractures, Fremont A. Chandler, M.D., Chicago

Nov. 7 Hypertension with Complicated Heart Lesions, W. D. Paul, M.D., Iowa City

In addition to these programs, courses in medicine and surgery are also being planned for the First, Fourth and Tenth Councilor Districts. The first district will conduct its six meetings at bimonthly intervals in Charles City, Decorah and Oelwein. Each of these centers will entertain two of the meetings. The fourth district will hold its first three weekly meetings in Storm Lake, and the last three in Sac City. Corning, Creston and Osceola have been chosen as centers for the tenth district course which will also run for six consecutive weeks. The present plan is to begin all three courses around the first of October.

The postgraduate courses are open to all physicians, nurses and assistants in the respective districts, and the Speakers Bureau urges all those within driving distance of the centers to attend the series of lectures. Letters announcing the final schedules, hours, meeting places and fees for the courses will be sent out by the Speakers Bureau in the near future, and any further information may be obtained by writing this office.

ANNOUNCEMENT

Three lectures remain on the Marshalltown postgraduate course which opened last February and has continued monthly through June. These meetings are held on the first Tuesday of every month at the Tallcorn Hotel in Marshalltown. Dinner is served at 6:30 p. m. and the lecture periods follow. The programs for the months of October, November and December are as follows:

Oct. 3 Medical Diseases of the Spine
Surgical Conditions of the Spine, with reference to the Nervous System only, Adrien H. Verbrugghen, M.D., Chicago

Nov. 7 Blood Diseases, Willis M. Fowler, M.D., Iowa City
*Diseases of the Skin, Henry E. Michelson, M.D., Minneapolis

Dec. 5 Fractures, Donald C. Conzett, M.D., Dubuque

Some Clinical Aspects of the Colon, Rectum and Anus, R. Russell Best, M.D., Omaha

*Tentative

RADIO SCHEDULE

WOI—Wednesdays at 3:45 p. m.
WSUI—Tuesdays at 4:00 p. m.

*Sept. 12 Care of the Teeth, Floyd W. Pillars, D.D.S.

*Sept. 19 Syphilis, Dale D. Cornell, M.D.

Sept. 26 Plastic Surgery, Walter Kirch, M.D.

Oct. 3 Tonsillitis, (To be announced)

Oct. 10 Abdominal Pain, Paul R. Olson, M.D.

*The September 12 and 19 broadcasts over Station WSUI will be heard at 7:45 p. m.

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

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PERSONALITY

Mental Hygiene has been proposed as a subject for study in the Woman's Auxiliary for this coming year. The purpose of this article is to present personality as one of the component factors of mental hygiene. The New York Health Commission[1] has given this definition of mental hygiene, "In its fullest meaning mental hygiene is directed to developing personality to its greatest possibilities so that every individual gives his best to the world and knows the deep satisfaction of a life richly and fully lived."

The term "personality" involves a great many factors which lead us into various channels of life, thus giving us individuality. First let us consider the origin and the meaning of the word "personality." The word "person" is derived from the Latin "persona," meaning a mask used by actors. It gradually came to mean the actor himself, and later a human being. Webster defines personality as "that which constitutes distinction of person, individuality." Therefore, every human being possesses a personality of some type; he is an individual.

Let us consider three conceptions of personality: namely, heredity, environment and conscious effort or self will. Psychiatrists[2] who believe each individual is born with certain fixed traits of personality which establish individuality and dominate his behavior, have given us five basic elements: the psyche, the impulse or driving force, the intelligence, the temperament and the ego. Every personality contains each of these elements in some degree with each component dependent on the other. The frustration of one has its effect on other components of personality. Surroundings and activities of every day life tend to mold the personality of an individual. Menninger[3] says, "Whatever nucleus is inherited is soon acted upon by the great variety of powerful influences. There are the teaching, training, and example of the parents, and the reactions to brothers and sisters; there are climate and weather, the architecture of the home, the food, fashion; there is the influence of the school, church, newspaper, playmates and society in general. Then come the accidents of life, physical and mental, the illnesses, the wounds, the griefs, the disappointments that come to all people. All these things go to make up a personality."

Certainly conscious effort has been no small factor in the developing of the personality of individuals. Ideal environment and favorable heritage without a constant effort on the part of the individual have never developed a desirable personality. The modern tendency in the public schools is to guide the child along such lines that he may become a social asset, a happy and cultured individual. He is helped to meet situations and make necessary and proper adjustments.

Dr. Frederick L. Patry,[4] neuropsychiatrist of New York University, has given us a few suggestions for achieving better personality performance.

1. Personal desires and effort can largely determine personality development. One must work hard for it, consistently and with singleness of purpose.

2. The person must recognize and understand the causes of disagreeable traits, know how to replace them with more socially desirable and pleasant ones and a willingness to strive unremittingly through practice in reaching one's objectives.

3. Because of the influence of example through suggestion and identification in molding personality, serious attention should be given to the sort of human beings with whom one intimately associates.

4. Create opportunities to expose the individual to a great variety of new persons and environments, but not out of proportion to his stage of development.

5. Should you feel that you are better or supe-

rior in the ability to those about you, critically analyze yourself in order to estimate the relative rôles of self-confidence and conceit. Size up a person on his concrete performance rather than on his own evaluation or manner.

6. There is no more important responsibility than learning to understand yourself and others if we are to promote the art of living happily with ourselves and others.

7. Promote personality growth by treating others with due respect for their ideas, feelings, attitudes, philosophies, and purposes.

8. Cultivate a sense of responsible individualism which encourages taking on of more and more responsibility in proportion to one's capacity, but also in the light of how others are affected.

9. Do not be too set in your purposes, goals or objectives. Respect the individual for what he may become. Change of environment, new opportunities, time for growth in personality formation and alteration in pressure of life upon the individual may pave the way for unexpected personality developments.

10. Realize the importance of detecting and correcting physical as well as mental stress, strain and drains, since these may cause unfavorable personality changes.

Discussion of personality is unlimited. This article has merely suggested a few of the many phases into which one might delve and study indefinitely. It is an interesting subject; interesting because it is a subject applicable to each one of us since personality is a quality each one of us possesses. It is true that at birth we inherit certain qualities from our ancestors; during childhood, schooldays, and adult life certain outside forces add their influences, some of which are good and some bad. As a result of these two factors the development of what is known as a "pleasing personality" depends largely on the direction of our efforts. We have no choice of ancestors; we cannot fully control the environment into which we are cast; but it is entirely up to us how much effort and what kind of effort we exert toward directing and developing in the right direction. Perhaps this article will arouse in some of us an interest in the study of this subject.

Mrs. Henry G. Decker

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THE VALUE OF THE AUXILIARY

As each Auxiliary year begins we find ourselves face to face with new problems and new possibilities. This year as we take our inventory, we find our great need is new members, not only individuals in each county, but also new county units. At no time has it been more necessary for doctors' wives to be well-informed and working together, to interpret intelligently for the laity the great underlying purposes of the American Medical Association. It is my hope that during the coming year our membership may be greatly increased. Let it be our goal that each county assist in the organization of one other county. Our success as an organization depends upon the number and strength of our membership.

As a basis for our organization work I am printing the contents of a leaflet which explains most clearly the Auxiliary, its functions and responsibilities.

An Auxiliary member should know that:

A Medical Auxiliary serves the medical profession and through it the public. Such service is satisfactory, because it is unselfish. An Auxiliary is always organized with the permission of the Medical Society and should have an Advisor or Advisory Committee to direct it. The Auxiliary should make an annual report to its Society and undertake no new project without approval.

The principal functions of an Auxiliary are: health education, public relations, legislation (reserve force), philanthropy, social.

The laity requires education, but it should be given through the Medical Profession, so there may be rational control of what the public thinks and does in health activities. Most important objectives of an Auxiliary are to direct public thinking and actions in channels the Medical Profession desires and to extend authentic information on health. We support an organization only when we are a member and understand the tasks and objectives and how to accomplish them. An Auxiliary member, therefore, should attend as many meetings as possible, so that she may:

1. Understand the purposes and objectives of her Auxiliary.
2. Receive the particular charge given by local, state and national.
3. Receive instruction in how to fulfill that charge.
4. Become informed about: personal and community hygiene; administration of local, state, national health; medical and health laws, local, state, national; health of her community; communicable diseases, their prevention and control; her health in relation to her community; general problems of health all should know; approved educational material, where to obtain it; the development of the Medical Arts; why the A. M. A. urges the promotion of Hygeia; how done; what legislation the Medical Society sponsors; why; how the Auxiliary acts as a reserve force, what the individuals may do; philanthropic work related to the Medical Profession; service by her Auxiliary; what her Auxiliary is doing; why; what lay organizations are doing in her community.

Mrs. W. R. Hornaday

SOCIETY PROCEEDINGS

Bremer County

The combined monthly meeting of the Bremer County Medical Society and the staff of Mercy Hospital, was held at the Fortner Hotel in Waverly, Wednesday, August 23. After the six-thirty dinner, Frank P. McNamara, M.D., of Dubuque, presented a pathologic demonstration, illustrated with x-ray films. He was assisted by Henry Edstrom, M.D., also of Dubuque.

P. K. Graening, M.D., Secretary

Fayette County

The Fayette County Medical Society met Tuesday, August 15, at the Coliseum in Oelwein for a six-thirty dinner and program, consisting of the showing of a motion picture film on heart conditions, presented by the General Electric X-Ray Corporation.

Floyd County

Members of the Floyd County Medical Society and the Cedar Valley Clinical Society heard two physicians from The Mayo Clinic, Rochester, Minnesota, discuss the subject of Headaches, at the meeting held in Charles City, Tuesday, August 22. Essayists were Bayard T. Horton, M.D., and P. H. Hyz, M.D.

Greene County

On the evening of Thursday, August 3, the Greene County Medical Society had a family picnic at the Country Club near Jefferson. Percy Gray showed travel pictures, and some motion pictures taken at the Greene County Hospital. Several physicians from outside the county attended the picnic, and brought their families.

John R. Black, M.D., Secretary

Hardin County

Christian B. Luginbuhl, M.D., of Des Moines, was guest speaker for the Hardin County Medical Society, at the regular meeting of that organization held in Eldora, Thursday, July 27. Dr. Luginbuhl spoke on Endocrine Therapy in General Practice.

Warren County

Many visiting physicians from surrounding counties were entertained by the Warren County Medical Society at a meeting held Tuesday, August 22, at the South Lodge in Ahquabi Park, near Indianola. The scientific program was as follows: Head Injuries, Walter D. Abbott, M.D., of Des Moines; and Diarrhea in Infancy, Lee Forrest Hill, M.D., also of Des Moines.

PERSONAL MENTION

Dr. **Addison W. Brown** has entered the private practice of medicine in Des Moines, with offices at 1208 Bankers Trust Building. Dr. Brown was graduated in 1935 from the State University of Iowa, College of Medicine, Iowa City, and completed his interneship at that institution. He has been associated with the department of obstetrics and gynecology at the College of Medicine in Iowa City for the past three years.

Dr. **Harold W. Morgan** of Mason City spoke on "The Alcohol Test for Intoxication" at a dinner meeting of the Independence Lions and Rotary Clubs and the Lions Club of Jesup. The meeting was held at the Hotel Gedney in Independence Tuesday, August 22.

Dr. **James A. Swallum** of Storm Lake announces the association of Dr. Paul W. Brecher with him in the practice of medicine and surgery. Dr. Brecher was graduated in 1938 from the State University of Iowa, College of Medicine, and interned at the City Hospital in Nashville, Tennessee.

Dr. **John D. Conner** will be associated with his father, Dr. Frank H. Conner in Nevada, in the practice of medicine and surgery. Dr. John was graduated in 1937 from the State University of Iowa, College of Medicine, Iowa City, and interned at the Iowa Methodist Hospital in Des Moines. Immediately prior to his location in Nevada, Dr. Conner conducted a locum tenens of several months in Greenfield.

Dr. **A. F. Walter**, after sixty years of active practice in Gladbrook, has announced his retirement. His associate, Dr. Lawrence G. Schaeferle, will continue to take care of Dr. Walter's practice in Gladbrook.

Dr. **Wilson C. Wolfe**, who has practiced a year in Coon Rapids, has left that locality and moved to Ottumwa, where he will be associated with Dr. D. O. Bovenmyer in the practice of his specialty, diseases of the eye, ear, nose and throat.

Dr. **Edward A. McMurray** of Newton announces the association of Dr. Leon P. Adams of St. Cloud, Minnesota with him in his practice. Dr. McMurray is leaving the first of October for New York, where he will take special postgraduate work in eye, ear,

nose and throat diseases, at the Polyclinic Hospital. Dr. Adams comes directly from St. Cloud, where he has practiced for the past fifteen years.

Dr. Kenneth E. Lister of Clarinda, who was graduated in 1938 from the State University of Iowa, College of Medicine, Iowa City, has become associated with Dr. A. L. Yocom, at the Yocom Hospital in Chariton. Dr. Lister completed a year's interneship at the Iowa Methodist Hospital in Des Moines, before locating in Chariton.

Dr. Walter Norem, who has practiced in Muscatine for the past three years, plans to sail for Persia, where he will be connected with the Presbyterian Hospital at Teheran, the capital of Persia. His practice will be taken over by Dr. Robert E. Miller, who was graduated in 1937 from the University of Wisconsin Medical School, Madison. Dr. Miller interned at the Research Hospital in Kansas City, Missouri, and has been associated with the New York Commonwealth Fund Hospital at Wauseon, Ohio, for the past year.

Dr. Jay D. Shively, who has conducted the Osceola Sanitarium for the past twenty years, is retiring from active practice, and has moved to Clinton, Missouri, to make his home. He has disposed of the sanitarium to Dr. Floyd E. Bates, who has returned to the United States from Canton, China, after eighteen years' practice in that country, during which time he was connected with the Canton Sanatarium and Hospital in Tung Shan. Dr. Bates was graduated in 1920 from the College of Medical Evangelists, Loma Linda-Los Angeles.

Dr. S. G. Dobias has located for the practice of medicine and surgery in Chelsea. He was graduated in 1938 from the College of Medical Evangelists, Loma Linda-Los Angeles, and completed his interneship this year at St. Luke's Hospital in Cedar Rapids.

Dr. Walter J. Aagesen, a recent graduate of the State Unviersity of Iowa, College of Medicine, Iowa City, has located in Dows, where he will practice. He interned at Butterworth Hospital in Grand Rapids, Michigan.

Dr. W. M. Krigsten has returned to Sioux City after four years of special work in orthopedics at the University of Chicago. He will confine his practice to this special field.

MARRIAGES

The marriage of Miss Eunice Johnson, daughter of Mr. and Mrs. C. A. Johnson of Albert City, and Dr. Orvin G. Glesne of Monona, son of Mr. and Mrs. Nels Glesne of Elkader, took place Thursday, July 27, in the Lutheran Church at Albert City. After a wedding trip in northern Minnesota, Dr. and Mrs. Glesne returned to Monona, where Dr. Glesne has been practicing for the past two years.

DEATH NOTICES

Carpenter, Fred Farley, of Pella, aged sixty-nine, died suddenly August 6. He was graduated in 1897 from Drake University College of Medicine, Des Moines, and at the time of his death was a member of the Marion County Medical Society.

Jerrel, Burt Owen, of Oskaloosa, aged seventy, died August 17 after a sudden heart attack. He had been in ill health for several years. He was graduated in 1894 from the Chicago Homeopathic Medical College, and had long been a member of the Mahaska County Medical Society.

Lamb, Leslie, formerly of Lorimor, aged sixty-eight, died August 5 at his home in Van Nuys, California. He was graduated in 1896 from the Keokuk Medical College, and had long been a member of the Union County Medical Society.

VACANCIES IN IOWA CCC

The Iowa District CCC announces several vacancies for doctors in CCC camps at the present time. Any graduate of a Class A medical school, with a license in any of the states, or a National Board Certificate, is eligible for the positions. Complete information may be obtained by writing the office of the District Surgeon, Fort Des Moines, Iowa.

PREVALENCE OF DISEASE

	July, '39	June, '39	July, '38	Most Cases Reported From
Diphtheria	9	18	7	Black Hawk, Buchanan
Scarlet Fever	58	144	75	Polk, Muscatine, Black Hawk
Typhoid Fever	23	11	13	Polk, Buena Vista, Linn
Smallpox	53	54	41	Scott, Polk, Osceola
Measles	271	511	286	Dubuque, Linn
Whooping Cough	136	131	102	Des Moines, Black Hawk, Fayette
Cerebrospinal Meningitis	1	2	1	Decatur
Chickenpox	46	139	37	Dubuque, Linn
Mumps	42	111	11	(For State)
Influenza	1	9	0	(For State)
Poliomyelitis	1	0	4	Plymouth
Rocky Mountain Spotted Fever	6	11	3	(For State)
Tuberculosis (Pulmonary)	82	50	76	(For State)
Undulant Fever	18	38	7	(For State)
Gonorrhea	163	163	177	(For State)
Syphilis	255	242	252	(For State)

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

DR. FRANK M. FULLER, Keokuk
DR. JOHN T. MCCLINTOCK, Iowa City
DR. R. T. LENAGHAN, Clinton
DR. TOM B. THROCKMORTON, Des Moines
DR. WALTER L. BIERRING, Des Moines
DR. WILLIAM JEPSON, Sioux City

History of the Iowa State Medical Library*

JEANNETTE DEAN-THROCKMORTON,
Ph.B., A.M., M.D.
Des Moines, Iowa

The Iowa State Medical Library is located in Des Moines, across the street from the State House, in the Historical Building, and has been in existence twenty years.

Agitation for a medical department of the Iowa State Library began about 1913, with the State Librarian, Mr. Johnson Brigham, and Judge H. E. Deemer, at that time chairman of the book committee of the Iowa State Library, vigorously assisting the movement. The library board of trustees instructed Mr. Brigham to seek counsel with the Polk County Medical Society and procure from that society a recommendation as to the type of books which would be most helpful to the profession.[1] Mr. Brigham wanted a collection of medical works which would be of real service to the profession.

This was done, and a committee from the Polk County Medical Society recommended two long sets, one of which, the *Proceedings of the London Pathological Society,* from Volume One (1848) to Volume Fifty-eight (1907), was purchased. The other, Virchow's *Archives,* printed only in German, was at that time deemed too costly for purchase. Later, full sets of the two leading medical periodicals in this country, the *Journal of the American Medical Association* and the New York *Medical Journal,* were bought, and these have been continued to the present date.

In the meantime, through the American Library Association, a system of interlibrary loans had become general. A few scholarly physicians and surgeons in Iowa availed themselves of the system through the medium of the State Library, and were enabled to borrow, for brief periods, books and periodicals from the John Crerar Library of Chicago, and from the Surgeon-General's Library at Washington, D. C. Mr. Brigham felt that what the Surgeon-General's Library and the John Crerar Library were able to do for the practitioners of the country, the State Library of Iowa should be able to do for the physicians and surgeons of Iowa. In his biennial report to the state Mr. Brigham[1] says: "A study of the card-system of a leading surgeon in Des Moines, Dr. Oliver J. Fay, suggested a plan, which, submitted to Judge Deemer, and to a committee of the State Medical Society, seemed so feasible that conferences were afterwards held by Judge Deemer and myself with Doctors Gershom H. Hill and W. W. Pearson, representing the State Medical Society, and a general plan of operation was agreed upon.

"The State Library Board set apart for the proposed medical library a small room on the second floor of the Historical Building, and requested the executive council to purchase steel bookstacks for the room. The council promptly ordered the stacks and same were installed.

"The custodians of the library of Drake University medical school, recently closed, turned over to the State Library a collection numbering over one thousand medical works.

"Doctors Gershom H. Hill, E. E. Dorr, O. W. Criley, Walter L. Bierring, W. W. Pearson, D. S. Fairchild and others, also donated several hundred volumes. These, with those already in the general library, make a strong nucleus for the proposed medical department.

"The Iowa State Medical Society has for the

*Presented before the Forty-second Annual Meeting of the State Society of Iowa Medical Women, Des Moines, April 25, 1939.

past two years had a standing committee to cooperate with a standing committee of the State Library Board. After several conferences and an examination by the committee of the room set apart for the medical library, including the shelving and the books placed upon the shelves in classified order, a more detailed working agreement was reached by the two committees as to the best means of securing the desired end; namely, the creation of a medical library which shall prove as helpful to the physicians and surgeons of the state and to the students of medicine and surgery as is the present law department to the courts, the bar, and students of law.

"My hope, shared by the committees mentioned, is that the state will make it possible for even the most remote practitioner to avail himself of the resources of the medical library.

"The committee representing the Iowa State Medical Society proposes to join with the State Library Board in asking the General Assembly to create a relatively small book fund for the proposed department, and to provide the State Library with a medical assistant . . . who should be one who has had the advantage of an education in medicine and surgery, and is familiar with the languages in which the literature of his profession finds expression."

In his report two years later Mr. Brigham[2] states: "I am able to report only slight progress during the past biennial period toward the creation of a medical department. The proposed department is, in my judgment, of much importance to the state and the future of the medical profession in Iowa."

Again, two years later, Mr. Brigham[3], in his biennial report mentions the death of Judge H. E. Deemer, with his desire for a medical library still unrealized, and urged: "What more fitting tribute to the great Iowan, and to the great medical profession that during our two years of war has so unselfishly given itself to the cause of human liberty, than to take prompt legislative action establishing the medical department urged by Judge Deemer and by the medical profession of the state?"

Doctor D. S. Fairchild spoke in a similar strain when he said in an editorial[5] in the Journal of the Iowa State Medical Society: "The death of Judge Deemer removes a citizen that Iowa could not well spare . . . With all the people's welfare in mind, he sought to improve their opportunities for knowledge. The great law library was the product of his efforts and no attorney can fail of a feeling of pride when he visits the capitol in search of authority to support his legal contentions . . . He devoted much time and thought to the development of the historical branch of the state library. One of the efforts of the later years of his useful life was to develop a medical department of the state library.

"Judge Deemer, Johnson Brigham, Doctors Bierring, Pearson, Fay and Hill devoted much time to a plan to bring about so desirable an addition to public welfare. The first essential was an appropriation sufficient to secure a trained medical librarian and as rapidly as possible, secure expensive reference works on medicine and journals, which were beyond the reach of the medical practitioner of limited income. In this respect, the medical profession has sustained a great loss in the death of Judge Deemer, who visited many medical centers to get the best ideas in relation to medical libraries . . . It would be a fitting testimonial of respect to the memory of Judge Deemer who devoted so much time and thought to increasing our opportunities for medical knowledge, if the profession of Iowa would join in an united effort to secure from the present legislature, the accomplishment of what he had so much at heart: a medical department of the state library."

Finally the long desired objective was attained, and a medical department of the Iowa State Library was established in July, 1919, by the Thirty-eighth General Assembly, occupying one small room on the second floor of the Historical Building. At the end of its first year the department was comprised of 1,430 volumes, made up by the transfer of medical books already in the general library, and those donated by the Drake University medical library, the Medical Library Club, the Journal of the Iowa State Medical Society, the State Board of Health, the Des Moines Medical Women's Clinic, and Doctors Gershom H. Hill, David Sturgis Fairchild, A. A. Anderson, Benton H. Criley, O. W. Lowrey, Lewis Schooler, E. E. Dorr, W. L. Bierring and many other individuals.

The unique feature of the Iowa State Medical Library is the loaning system which extends into every county in Iowa. At the time of its origin in 1919 this service was characteristic of the Iowa State Medical Library alone. This loaning system was in use by the Iowa State Traveling Library under Miss Julia Robinson, and from it Mr. Brigham patterned his plan for the proposed medical department.

However, let Mr. Brigham[4] again speak and tell it in his own words: "The plan of service contemplated by the new medical department is in one respect unique in the history of medical libraries. The lawyer retained in an important case

can take time to 'camp down' in the State Law Library and work up his case, either under pressure or at his leisure; but the physician or surgeon cannot well leave his practice for even a day to consult the reports and authorities in a single case. Even if he could take the time, the case in hand might be too serious to admit of delay.

"From long association with the State's Traveling Library, with its loaning system extending into every county in Iowa, I conceived the idea of utilizing the same system in the proposed medical department. Presenting my scheme of utilization to my fellow state librarians in conference at Washington, D. C., a few years ago, I found it met with their enthusiastic approval, and was urged to try it out in Iowa and later report the measure of success it should attain. I found that nearly every state library and large reference library in the country had its problem in the shape of collections of medical works which remained on the shelves practically unused, with the certainty that new purchases would share the same fate. The traveling library plan proposed would solve the problem."

The success of the mailing system has surpassed all expectations, for it now comprises the main work of the library, making the volumes in the medical library accessible to doctors any place in the state.

The first librarian, Miss Margaret Brinton, was followed by Miss Lavina Steele, Miss Frances Vanzandt and Mrs. Helen Kurt, in the first ten years of the library's existence.

The present librarian, Jeannette Dean-Throckmorton, M.D., took charge in 1929, at which time the medical library, then ten years of age, was comprised of 9,000 books and 3,004 reprints, but no card index for transactions of societies or special chapters in books. At the present time there are 22,500 books, 45,000 reprints indexed and filed, and a card index made for hundreds of society transactions and chapters in books. In addition, the present librarian started a collection of rare books, and a museum of medical objects of historical interest which includes old instruments, old fee bills, secretaries' records of medical societies of this state, photographs of 'Three Generations of Doctors in Iowa', and other photographs of medical groups and individuals. The original list of 78 journals recommended by the standing committee of the Iowa State Medical Society, Doctors Hill, Fairchild, Bierring and Fay, now totals 222, of which 36 are gifts.

The services of the library include the following conveniences. If a doctor has a paper to write or wishes to read on some unusual subject, he can send in his request and by return mail receive the latest books and journals. Promptness in getting literature to a doctor was made a rule by the present librarian, since the time at the disposal of a busy doctor is limited and liable to many interruptions. Doctors may have journals of their own selection mailed to them regularly. The period of loan is two weeks, with the privilege of one renewal, providing other calls have not been received. The only expense is the postage. The library is open from 8:00 a. m. to 5:00 p. m.

The services given have been greatly increased and broadened during the past ten years, so that in addition to the mailing and reference services, they now include bibliographies covering the entire literature in foreign as well as in the English language, and expert assistance to lawyers in medicolegal and compensation court cases. The advantage of having a doctor of medicine as medical librarian is obvious, and Iowa is one of the fourteen so privileged in the United States and Canada.

The circulation of the library has greatly increased; ten years ago[6], 2,048 people used 9,694 pieces of literature, last year almost 7,000 people consulted 30,000 books and journals. The doctors of Iowa are still making gifts to the library as generously as they did in its inception; last year in twelve months they gave 18,197 books, journals and reprints, and several framed pitcures of medical groups, one of which was the Iowa State Medical Society of 1919.

The medical library passed through a hazardous time two years ago, and for a short period seemed threatened with extinction. During the legislature of 1937, for economic reasons, the suggestion was made that the medical library be sent to Iowa City, there to be combined with the medical library of the State University. Iowa City did not want it and had no room for it. The doctors of the state wanted it left in Des Moines so it would be centrally located; and they wanted its mailing and reference services continued. Time was short for action; but the Iowa State Medical Society, by long distance and telegraph, gave explanations and brought pressure to bear upon the right people, so that the movement was dropped. Thus the medical library remained in Des Moines, and continued its mailing service.

In 1939, after exactly twenty years of existence, the Forty-eighth General Assembly passed a library consolidation bill which vitally affected the medical library. This bill created three librar-

ies: the Medical, the Law and the Traveling, the latter absorbing the former general and economics libraries. The office of state librarian was abolished. The Senate passed this bill without one dissenting vote, on February 7, 1939. The House was as unanimous as the Senate had been, passing the bill on February 8, 1939. It was signed by Governor George A. Wilson on February 13, and printed February 16 in the Chariton *Herald-Patriot* and the Shenandoah *Evening Sentinel*, by which act and on which date it became a law.

The Medical Library, by virtue of the above bill, is now called the "Iowa State Medical Library" instead of being a medical department of the Iowa State Library. It no longer is under a state librarian, since that office was eliminated. It is directly responsible to a state library board consisting of the governor, the superintendent of public instruction, and one supreme court justice. This replaces the former board consisting of the same officials with the secretary of state and the other eight supreme court justices.

This bill is greatly to the advantage of the medical library, since it is no longer under a state librarian. Mr. Johnson Brigham, state librarian for over forty years, who was instrumental in starting the medical library, was always interested in its growth and expansion. By his death in 1936, the Medical Library lost one of its best friends; and under the succeeding state librarian endured a period of financial stringency and distress for two years (1937-1939), during which the support fund was reduced autocratically to such an extent that there was scarcely enough money to pay for subscriptions, and no money for new books. Standing orders for transactions and year books had to be cancelled because there was no money. After the office of state librarian was abolished, the state generously offered to pay outstanding bills, thus enabling the Medical Library to retain its standing orders for subscriptions to transactions, year books and journals.

The future of the Iowa State Medical Library looks very promising, and the doctors of the state may look forward with happy anticipation to its growth, expansion and increased use, as it enters upon its twenty-first year.

BIBLIOGRAPHY

1. Report of the State Librarian of Iowa for the Biennial Period ending June, 1914, pp. 7-10.
2. Report of the State Librarian of Iowa for the Biennial Period ending June, 1916, p. 7.
3. Report of the State Librarian of Iowa for the Biennial Period ending June, 1918, p. 7.
4. Report of the State Librarian of Iowa for the Biennial Period ending June, 1920, pp. 12-14.
5. Editorial, Judge Horace E. Deemer, Jour. Iowa State Med. Soc., vii:111 (March) 1917.
6. Report of the Medical Library Committee. Jour. Iowa State Med. Soc., xix:348 (July) 1929.

COMING MEETINGS

Because we feel that many of the members of the Iowa State Medical Society may be interested in a number of national and special meetings, we are herewith publishing a calendar of the approaching sessions. More detailed information may be secured from the JOURNAL office.

American Board of Internal Medicine. Written examination will be held February 19, 1940 (application must be received before January 1, 1940). Secretary, Dr. William S. Middleton, 1301 University Avenue, Madison, Wisconsin.

First American Congress on Obstetrics and Gynecology, September 11 to 15, 1939, Cleveland, Ohio. Address secretary at 650 Rush St., Chicago, Illinois.

Fifth Annual Meeting of the Mississippi Valley Medical Society, September 27 to 29, 1939, Burlington, Iowa. Secretary, Dr. Harold Swanberg, Quincy, Illinois.

Forty-fourth Annual Convention American Academy of Ophthalmology and Otolaryngology, October 8 to 13, 1939, Palmer House, Chicago. Address Academy at 1500 Medical Arts Building, Omaha, Nebraska.

Sixty-eighth Annual Meeting of the American Public Health Association, October 17 to 20, 1939, Hotel William Penn, Pittsburgh, Pennsylvania. Secretary, Dr. R. M. Atwater, 50 West 50th Street, New York, N. Y.

Seventh Annual Assembly of the Omaha Mid-west Clinical Society, October 23 to 27, 1939, Hotel Paxton, Omaha, Nebraska. Secretary's office, 1036 Medical Arts Building, Omaha, Nebraska.

Twelfth Graduate Fortnight of the New York Academy of Medicine, October 23 to November 3, 1939. Program will be devoted to The Endocrine Glands and Their Disorders, and will consist of morning round-table conferences, hospital clinical programs, evening sessions and a scientific exhibit. Registration limited to medical profession; fee is $5.00. Program can be obtained by writing Mahlon Ashford, M.D., the New York Academy of Medicine, 2 East 103rd Street, New York, N. Y.

Annual Conference of the National Society for the Prevention of Blindness, October 26 to 28, 1939, Astor Hotel, New York, N. Y. Complete program may be obtained by addressing the Society's offices, 50 West 50th Street, New York, N. Y.

American Academy of Pediatrics, Annual Meeting, Cincinnati, November 16 to 18, 1939. Secretary, C. G. Grulee, M.D., 636 Church Street, Evanston, Illinois.

Eighty-ninth Annual Session, Iowa State Medical Society, May 1, 2 and 3, 1940, Hotel Fort Des Moines, Des Moines, Iowa.

American Medical Association, Annual Session, New York, June 10 to 14, 1940.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

PRINCIPLES AND PRACTICE OF OPHTHALMIC SURGERY—By Edmund B. Spaeth, M.D., associate professor of ophthalmology in the Graduate School of Medicine, University of Pennsylvania. Lea and Febiger, Philadelphia, 1939. Price, $10.00.

GONORRHEA IN THE MALE AND FEMALE—By P. S. Pelouze, M.D., assistant professor of urology, University of Pennsylvania. Third edition, thoroughly revised. W. B. Saunders Company, Philadelphia and London, 1939. Price, $6.00.

THE VAGINAL DIAPHRAGM—By Le Mon Clark, M.D., Chicago. Illustrated. The C. V. Mosby Company, St. Louis, 1939. Price, $2.00.

WHAT IT MEANS TO BE A DOCTOR—By Dwight Anderson. Published by the Public Relations Bureau, Medical Society of the State of New York, 2 East 103rd Street, New York, N. Y., 1939. Price, $1.00.

MENSTRUAL DISORDERS, PATHOLOGY, DIAGNOSIS AND TREATMENT—By C. Frederic Fluhmann, M.D., associate professor of obstetrics and gynecology, Stanford University School of Medicine, San Francisco, California. W. B. Saunders Company, Philadelphia and London, 1939. Price, $5.00.

THE GENUINE WORKS OF HIPPOCRATES—Translated from the Greek by Francis Adams, LL.D., Surgeon. The Williams and Wilkins Company, Baltimore, Maryland, 1939. Price, $3.00.

A TEXTBOOK OF CLINICAL NEUROLOGY—By Israel S. Wechsler, M.D., professor of clinical neurology, Columbia University, New York. Fourth edition, revised. W. B. Saunders Company, Philadelphia and London, 1939. Price, $7.00.

CLINICAL PATHOLOGICAL GYNECOLOGY—By J. Thornwell Witherspoon, M.D., formerly associate professor of experimental and pathological gynecology, Indiana University Medical Center. Lea and Febiger, Philadelphia, 1939. Price, $6.50.

LIFE AND LETTERS OF DR. WILLIAM BEAUMONT—By Jesse S. Myer, M.D., late associate in medicine, Washington University, St. Louis. The C. V. Mosby Company, St. Louis, 1939. Price, $5.00.

CANCER HANDBOOK OF THE TUMOR CLINIC, Stanford University School of Medicine. Edited by Eric Liljencrantz, M.D., chief of the Tumor Clinic. Stanford University Press, Stanford University, California, 1939. Price, $3.00.

HEALTH OFFICERS' MANUAL—By J. C. Geiger, M.D., Dr. P.H., director of the Department of Public Health, City and County of San Francisco, California. W. B. Saunders Company, Philadelphia and London, 1939. Price, $1.50.

PERSONAL AND COMMUNITY HEALTH—By C. E. Turner, A.M., Dr. P.H., professor of biology and public health, Massachusetts Institute of Technology. Fifth edition. The C. V. Mosby Company, St. Louis, 1939. Price, $3.00.

BOOK REVIEWS

GONORRHEA IN THE MALE AND FEMALE

By P. S. Pelouze, M.D., assistant professor of urology, University of Pennsylvania. Third edition, thoroughly revised. W. B. Saunders Company, Philadelphia and London, 1939. Price, $6.00.

This book of 470 pages is packed with clinical data, anatomic views, illustrations and charts pertinent to the complete life cycle of the gonococcus. To a certain extent, this edition represents an advanced view of the preceding volumes, both of which were well received by all who are concerned with the ravages of this infection. This volume is distinguished from its previous editions in that it is separated into three main subdivisions.

Part one includes a complete and detailed study of the gonococcal infection in the male. The anatomic sketches are especially clear and elucidating. Part two offers similar studies in the female with associated analogies. Part three, which is new, introduces the author's experiences in clinics, his personal care of patients, and observations of those factors which tend to promote the spread of this infection. He also gives a resumé of results from the use of sulfanilamide therapy as compared with those obtained by treating patients with other methods.

The author rightly contends that any patient infected by the gonococcus can, and should, expect a cure if proper measures in general and local therapy are instituted. However, it is difficult to accede that social welfare workers should be given special commendation, while at the same time a rather critical attitude is registered toward members of the medical profession with reference to progress in combating this infection.

Without a doubt, this volume is of such merit that it should be available to every practitioner who attempts to deal with this disease. It is a valued contribution to medical literature. W.R.H.

SURGICAL ANATOMY

By C. Latimer Callander, M.D., associate clinical professor of surgery and topographic anatomy, University of California Medical School. Second edition, entirely reset. W. B. Saunders Company, Philadelphia and London, 1939. Price, $10.00.

This volume endeavors to portray important practical anatomic relationships, the knowledge of which is so vital to both the general practitioner and specialist. Many changes have been made in this second edition. Excellent new illustrations and drawings have been added. Nearly every page contains one figure and many of them two or more.

The anatomy is considered according to systems. For instance, the portion dealing with the neck discusses the anatomy concisely and illustrates the anatomic relationships in various planes. Following these few pages we have brief discussions of various surgical operations such as thyroidectomy, removal of pharyngo-esophageal diverticula, ligation of important vessels, phrenic nerve avulsion, superficial and deep gland resection of the neck, cervical rib and other similar procedures.

Each system of the body is taken up in a similar manner, stress being laid upon important anatomic relationships. This work has been written for those interested in surgery and although the name suggests only an anatomic study, considerable technic

dealing with many of the common and some of the uncommon operative procedures is presented in detail. The reviewer feels that it is a contribution which the majority of practicing physicians cannot afford to be without. J.B.P.

A MANUAL OF REPARATIVE PLASTIC SURGERY

By J. Eastman Sheehan, M.D., professor of plastic reparative surgery, New York Polyclinic Medical School and Hospital. Paul B. Hoeber, Inc., New York, 1938. Price, $5.50.

This textbook covers the entire subject of plastic surgery. It is brief but concise, and well illustrated by drawings and photographs. The various operative procedures discussed are ones that have proved most successful in the hands of the author.

Although this book was written primarily for the plastic surgeon it is an excellent one and a handy reference for the general surgeon who is interested in this branch of work and is frequently required to do some plastic repair. L. H. L.

CANCER HANDBOOK OF THE TUMOR CLINIC STANFORD UNIVERSITY SCHOOL OF MEDICINE

Edited by Eric Liljencrantz, M.D., chief of tumor clinic, Stanford University School of Medicine. Stanford University Press, Stanford University, California, 1939. Price, $3.00.

This handbook of approximately one hundred pages is an accurate and concise summary of the diagnosis and treatment of the more common types of cancer. It is based upon postgraduate lectures given at Standard University School of Medicine, and the methods outlined are those at present utilized in the school's tumor clinic. Edited by Dr. Eric Liljencrantz, it nevertheless represents the combined knowledge of all the active members of the clinic staff.

The first two chapters are devoted to general discussions of the cancer problem, the diagnosis of cancer, the different methods of performing biopsies, the histologic grading of tumors and the principles of radiation. Under the latter are given lists of both normal and neoplastic tissues arranged according to radiosensitivity. These two chapters will be of considerable value to general practitioners who occasionally are at a loss to understand the fundamental principles involved. In these chapters and throughout the handbook, emphasis is placed upon the necessity of early diagnosis and the prompt institution of adequate treatment. This demands education of the public, but the main responsibilities fall squarely on the shoulders of the physician first consulted, usually the family physician. He must learn to anticipate the possibility of cancer in his patients. Attention to symptoms or signs, no matter how trivial, increases the opportunity for the doctor to establish a diagnosis of disease in its incipient stages when cure is most likely. When the diagnosis is made, he should insist upon the prompt application of the most appropriate method or combination of methods for cure or arrest of every case.

The ten succeeding chapters are devoted to discussion of the more common malignant tumors by systems. These descriptions are brief but adequate for the purpose of the handbook. A comprehensive bibliography enables the reader to locate more complete accounts if necessary. Illustrations greatly enhance the value of the text. Frequent notations concerning what should not be done in the diagnosis or treatment of the different forms of malignancy constitute another important feature. Too often these factors are forgotten or neglected and this fact undoubtedly explains some of the poor results in the management of cancer.

On considering the treatment designated for different tumors, one cannot fail to be impressed by the fact that each case is individualized and the treatment carefully planned by all concerned. This is very important because in less well organized units, at times, treatment is given without plan and without full consideration of whether it is for the purpose of cure or only arrest. Throughout the handbook the close cooperation between the internist, surgeon, radiologist and pathologist, now considered essential in the management of cancer, is evident. Whenever possible a given tumor is clinically classified and the classification serves as a guide to treatment. The descriptions of the clinical classifications, sometimes illustrated with diagrammatic drawings, are sound and should be understood and adopted by every doctor who treats cancer.

Under the various types of malignant tumors considered, the treatment advocated for the different anatomic stages encountered are clearly outlined. No one method of treatment is advocated to the exclusion of others, but surgery, x-ray, radium and electrocoagulation are all utilized. Whenever preference is given to one form of treatment, the reasons for its selection are stated and these are in agreement with what are considered best in the leading cancer clinics of this country.

In conclusion, this small volume is an excellent example of the printer's art. It is filled with important facts in regard to the diagnosis and treatment of cancer and, therefore, is a valuable guide for all those concerned in its management. To the profession of Iowa, it is of especial value because it supplements the Cancer Manual developed by the Executive Cancer Committee in 1938. If the facts in each are fully utilized, we shall do much to reduce cancer mortality in Iowa. F.P.McN.

A TEXTBOOK OF SURGERY

By American Authors. Edited by Frederick Christopher, M.D., associate professor of surgery, at Northwestern University Medical School. Second edition, revised. W. B. Saunders Company, Philadelphia and London, 1939. Price, $10.00.

This second edition of a noteworthy volume is a valuable book not only for the surgeon but for any doctor of medicine. It is a thorough text for student and physician alike.

The author of the text has not tried to cover the field of surgery alone, but has had the assistance of outstanding surgeons of the United States in preparing chapters on subjects of particular interest to them. This compilation has brought together in a single textbook the opinions and knowledge of American authorities on surgery. Many of the special branches of surgery are carefully considered in the text; worthy of special mention are the chapters on hand infection and plastic surgery. The most recent results of research workers in special pathologic conditions have been included by the author in his attempt to give to the profession the last word in treatment of surgical conditions. The pre-requisite fundamentals, diagnosis, management and postoperative care of surgical conditions are carefully described.

The book is illustrated with adequate pictures to make reading easy and the reader is never in doubt because of the precise editing and figures. This reviewer has no reservations when he recommends Christopher's Textbook of Surgery to his professional friends. L.D.P.

SURGERY OF ORAL AND FACIAL DISEASES AND MALFORMATIONS

By George Van Ingen Brown, D.D.S., M.D., emeritus professor of plastic surgery, University of Wisconsin. Fourth edition. Lea and Febiger, Philadelphia, 1938. Price, $10.00.

The title of this book is slightly misleading, because the author has not been satisfied with writing an unusually complete textbook on surgical conditions involving the face and mouth, a task for which he was preëminently equipped through long experience and experimentation, but he has also added a thorough review of infectious, neurologic and dermatologic diseases directly or indirectly affecting the same areas. As a result, Dr. Brown's publication is not only an almost indispensable part of the oral and plastic surgeon's armamentarium, but it would form an extremely valuable addition to the library of the general practitioner, surgeon, neurologist, rhinologist and dentist.

The book is written from an entirely practical standpoint. Anatomic, physiologic and pathologic descriptions are given briefly but adequately wherever necessary. The emphasis is laid on diagnosis and treatment. No essential points have been omitted. Wherever several operative procedures have been evolved to achieve the same purpose, the author describes and compares them, giving succinctly his reasons for preferring certain ones. Especially complete are the chapters dealing with those subjects which Dr. Brown has made his particular life work: diseases and fractures of the jaws, and plastic reconstruction of congenital and acquired deformities. No less valuable, however, is the chapter on neurologic conditions, especially the neuralgias and paralyses.

It was the reviewer's impression that the author had had less experience with, or less interest in, the treatment of malignant conditions. This chapter is the only one which could be criticized as inadequate. The author's pet theory that many troubles in children, including certain cases of asthma, originate in an insufficiently wide nasal aperture and too narrow a palate, left this reader somewhat skeptical, although the idea was accompanied by much anatomic and physiologic documentation. Dr. Brown has devised corrective measures for this condition and cites several cases which have been treated successfully. There are many excellent drawings and photographs throughout the text. Numerous practical hints of technic not found in the usual textbook are given. The style is simple, direct and clear. W.K.

MEDICAL JURISPRUDENCE AND TOXICOLOGY

By William D. McNally, M.D., assistant professor of medicine, Rush Medical College. W. B. Saunders Company, Philadelphia and London, 1939. Price, $3.75.

This volume presents in concise form a great deal of useful information, particularly to those engaged in work for the coroner and those having medicolegal cases frequently. Its information is extremely valuable to those performing autopsies for legal authorities. Many chapters will be of interest to general practitioners, particularly those discussions on the use of x-rays and radium and the paragraphs on insanity. The discussion of poisons, of course, occupies a large part of the book and the differential diagnosis in cases of poisoning is carefully developed, together with the best methods of treatment available. The latter portion of the book dealing with specific tests is of use to those who are called upon to carry out extensive legal investigations. The chapter on food poisonings should be read by those physicians who persist in calling such conditions "ptomaine poisoning." H.W.M.

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ADDRESS*

SOME OF THE PROBLEMS CONFRONTING THE MEDICAL PROFESSION

IRVIN ABELL, M.D., Louisville, Kentucky

Mr. President, members and guests of the Iowa State Medical Society, I deeply appreciate the privilege of speaking to you this morning upon some of the problems which confront us. In the change in social thought which has occurred during the past few years, much has come about that is at rather wide variance with what heretofore had been accepted as fixed and established. Workmen's compensation, unemployment compensation, and old age pensions are an index of the urge for a wider distribution of social justice. In carrying out this urge, there are some who would go the full extent of complete socialization, and, apparently, they have selected medicine as the proving ground. If scientific medical knowledge and human intelligence could be distributed in boxes and crates as market commodities, such a conception of economics possibly might be carried out. Now the fundamental conception in both economics and ethics is that of value. In economics, the ultimate test of value is the amount of goods which will be consumed, or the premium which will be paid for it in the market. Ethics embraces a wider consideration, and its ultimate test of value is to be determined by the effect upon the individual and the society in which the individual lives.

The advance in the distribution of medical science, so far at least, has been purely and simply evolutionary; methods having been evolved to meet needs as they have arisen. The record is one of which we may be justly proud. Mortality rates have been reduced fifty per cent. Increased expectancy of life has now attained approximately one hundred per cent. During the year 1938, an all-time low mortality rate in every disease in this country has been attained, with the exception of heart disease and cancer, and the explanation for this is readily at hand. As a result of the application of preventive medicine, we have developed a society in which there is a greater proportion of people living beyond the age of forty years than known heretofore in any part of the world. Since both cancer and heart disease take their greatest toll at and after this age of life, their greater incidence is readily understood.

Even with this remarkable accomplishment of medicine no one knows better than the medical profession of the lag or gap that exists between accumulated medical knowledge and its equable distribution. No one or no agency desires more than the medical profession to see this gap bridged, granting that it can be done with the maintenance of the ethical institution of medicine. As far back as 1875 the American Medical Association recommended the formation of a Department of Health in the Cabinet of the President, with a medical man at its head. During the passing years it has reiterated this proposal on a number of occasions. During the same passing years there has been a gradual extension of federal agencies into health activities; the United States Public Health Service in the Department of the Treasury, foods and drugs in the Department of Agriculture, maternal and child welfare in the Department of Labor, the care of the Indians and the insane in the Department of the Interior, the Medical Corps of the Army and Navy with their own establishment, the care of the veterans in the Veterans' Administration, the care of indigent farmers in the Resettlement Administration, and so on through twenty-seven different federal agencies, involving an expenditure of approximately $600,000,000 a year.

The President appointed an interdepartmental committee to coordinate and correlate the health and welfare activities of the government, and this committee, in turn, appointed technical subcommittees to help it in its studies, one of which undertook the study of medical care. Its conclusions and its data were largely assembled from

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the National Health Survey, which was made largely by non-medical WPA workers, embracing approximately 4,000,000 people, both rural and urban inhabitants, in seventeen different states. Its conclusions and its data show wide discrepancies with the data which the American Medical Association accumulated during its ninety years of existence. As one goes through the National Health Survey, he finds many inaccuracies and inadequacies. From my own viewpoint, the greatest objection to it, I think, is that it stresses the inefficiencies and says little about the efficiencies. For instance, a lay person reading that report and noting a certain number of deaths in this country each year from tuberculosis would infer that all tuberculosis can be eradicated simply by the allocation of federal funds. It is granted that a spot survey or a case finding program will help, but the survey fails to stress the fact that, since the first of the century, the medical profession has succeeded in reducing the mortality rate from tuberculosis by seventy-five per cent.

Furthermore, in its consideration of maternal deaths, every death of a mother from the time of conception until she is discharged after the birth of her baby, is counted as a maternal death. The rate in this country is presumed by the National Health Survey to be unduly high, but this rate is not broken down. We know, for instance, that from one-fourth to one-third of all the maternal deaths in this country follow abortion, and all of the federal money in the world will not reduce that death rate unless it is devoted to the education of women as to the danger of induced abortion. If we take the death rate among the whites, particularly in the states enjoying the upper income level, the maternal death rate would be found to compare favorably with that in any other country in the world. We, and particularly those of us who live in the South, know the conditions under which the negro lives. They are poorly clothed and poorly housed and poorly fed; and many, many times without medical care. They are rachitic, bowlegged, bandy-legged, with deformed pelves, and the maternal death rate is inordinately high. I submit that the existence of such conditions is an indictment of society, certainly not an indictment of the medical profession.

Again, the slogan which was developed from the National Health Survey, that one-third of our people are poorly clothed, poorly fed, poorly housed and without medical care, I think, is open to debate. It is perfectly possible in some of the rural districts, particularly those of the far South, inhabited chiefly by negroes, that this is true, and in some of the counties in my own state I think it is true. For instance, in one of our counties, Owsley County, Kentucky, there are 10,000 people. They collect an insufficient fund in taxes to meet their local governmental agencies. There is only one doctor in the county, no hospital, no dentist, and no trained nurse. It is perfectly possible in that county that one-third, and even a greater percentage, of the people would come within that classification. However, in my own city of Louisville, with its municipal hospital, with an extensive outpatient department, with a children's free hospital, with a crippled children's hospital, with two tuberculosis hospitals, with each private hospital maintaining a limited charity service, with mental hygiene clinics, with baby clinics, with cancer clinics, it is not true that any proportion of our people go without medical care, granting that they know where to get it and are willing to accept it. The type of medical care provided in these institutions is of the best, since the medical service is largely under the control of the medical school of the University of Louisville. Therefore, if it were true that one-third of our people are poorly clothed, poorly housed, poorly fed and without medical care, then I submit that the problem is more economic and social than medical.

Again, in the question of hospital facilities we find a marked difference. The National Health Survey indicates there are more than 30,000,000 people in this country living beyond a radius of thirty miles from a hospital. The American Medical Association's statistics show there are less than 2,000,000 people living more than thirty miles from a hospital, and these are largely in the states where the population density varies from one to five to the square mile.

One might go through the entire National Health Survey and pick out inaccuracies, but as far as I am personally concerned, I am willing to accept the factual data which it does contain, to serve as a basis for the discussion of a wider distribution of medical care. As you know at the National Health Conference in Washington, the technical committee made five recommendations, and, briefly, these were:

1. An extension of public health, maternal and child welfare services.
2. An increase in hospital facilities, in diagnostic facilities.
3. The medical care of the medically needy.
4. The development, in individual states, of programs for the care of all of the people of that state on a compulsory basis.
5. Compensation during illness.

This program was to be gradually developed over a period of ten years, and ultimately was to

cost $850,000,000 or $250,000,000 more than the $600,000,000 the government is at present spending in its health activities.

The American Medical Association, as you know, called a special session of its House of Delegates last September to consider these proposals. With four of them it agreed in principle, with certain provisions, and bear in mind that one of the essential provisions was that the need for these services could be demonstrated. It agreed it is worthwhile to expand public health service in preventive medicine, because the prevention of disease is certainly a greater accomplishment and attainment than the cure of an illness, or the control of it or the control of any particular group of diseases. It did specify that curative efforts were not to be made where such were available at the hands of private practitioners.

The American Medical Association and the entire profession, as you know, have at all times heartily cooperated with the United States Public Health Service, the local health service, the county and state health service, in the control and prevention of disease, and at the present time are even going with them insofar as treatment is concerned in the control of specific disease problems, notably tuberculosis, venereal diseases and poliomyelitis. The medical profession is perfectly willing to have public health services expanded, granting that the need can be demonstrated, and granting that the federal government does not incur curative therapy where such is available at the hands of private practitioners.

The American Medical Association agreed in principle on the expansion of hospital facilities and the construction of diagnostic facilities, and its provision there is that the need for the erection of new hospitals be definitely ascertained. If a hospital program is to be started on the basis of such as has resulted in the building of our post offices, we would have an unfortunate situation. As far as the demonstration of the need is concerned, it is of interest to note that the government spent $2,000,000 to build an orthopedic hospital in New Mexico, only to find that there were less than one hundred patients in the state, and that there was no competent orthopedic surgeon to care for them; it was necessary to import one from El Paso. To avoid a duplication of such inaccuracies the American Medical Association specified that the need for the construction of hospitals in any given community should first be demonstrated. It also stressed the point that the existing hospital facilities should be utilized to their utmost and developed in this program. In my own state, for instance, during the past year, the hospitals have shown a fifty per cent bed vacancy, and the hospitals of the country at large have shown a thirty per cent bed vacancy. It is only right to insist that the government utilize those vacant beds on a per diem basis, paying for the patients who are sent to them.

The American Medical Association also agreed with the extension of diagnostic facilities, and there, again, the big question will come as to the demonstration of need. We have 6,000 hospitals in this country, each one of which is equipped with all of the diagnostic methods that are needed for the detection and treatment of disease. Where are we to put the diagnostic clinics? The proposal made by the technical committee was that these diagnostic centers or clinics were to be erected at a cost of $30,000 each, that they were to carry radium, deep x-ray therapy, electrocardiography, basal metabolic determination, serologic and other tests for making a diagnosis. One can readily see that those centers also would of necessity become centers of treatment; they are bound to be, because in constructing these clinics in rural areas where such facilities are not already at hand, it follows as a matter of course that the facilities for treating such patients, particularly with radiotherapy and x-ray therapy, will not be available.

The American Medical Association agreed in principle with the medical care of the medically needy; but it seems to me unfortunate that we have to build any program for the future on the present economic status of this country. We are having, as you know, constantly ten, twelve or fourteen million men unemployed which, with their dependents, gives us practically 40,000,000 people on relief. We have just above this group what they now designate as the medically indigent; in other words, people who are able to purchase the necessities of life, food, fuel, clothing and shelter, but are totally unable to meet the costs of catastrophic illnesses when they occur. These two groups constitute a large percentage of our population. To repeat, I think it would be most unfortunate to build a program for the future with the idea that our economic condition will remain as at present. Is it beyond hope that economic conditions in this country may ultimately improve, and that the people who are now on relief may again become self-sustaining, may again exercise the rights which have always been characteristic of the American people, of individual initiative, with opportunity to select what they want and pay for what they want?

The American Medical Association realizes that under present circumstances there are groups

which are totally unable to pay for attention, and it has done its share, I think, in contributing to them. Even estimated on a minimum pay scale, the profession in this country, since the onset of the depression, has contributed in service approximately $1,000,000 a day to this group, $365,000,000 a year, a contribution greater than that made by any agency other than the federal government. The provision with which the American Medical Association has approved this particular recommendation is that the need for it should be established. We realize that the care of the indigent is primarily a responsibility of the community and of the local profession, else we would not have our city hospitals, and we would not have our free clinics. However, when, as a result of sparsely settled communities, having a low or no income, the need for their care becomes apparent, then the medical profession feels that an allocation of federal funds should be devoted to the care of these people, since it has grown to such an extent that the profession can no longer bear the burden alone. Another provision is that the existing welfare agencies should be simplified and correlated, and that provisions for medical care be developed by local, responsible public officials and the medical profession and allied groups. In other words, it still believes that such should be a community or state problem and not a centralization of medical control in federal bureaus.

The fourth recommendation was that plans should be developed in the individual states on a basis to be determined by such state, on a compulsory basis. Compulsory sickness insurance is not insurance. It merely seeks to provide medical attention when one becomes ill. The term which more accurately describes it is sickness tax, because it involves a check-off or a payment of five per cent of the income of those earning a certain amount of money, and the payment of this premium by the government for those who earn nothing. Mr. Falk of the technical committee, in reply to my question as to what income level he would suggest that a compulsory sickness insurance plan be operated, stated at an income level of $3,000 a year. I then asked if the federal government had reliable statistics which would show the number of people in this country earning more than $3,000 a year, and I was told "Yes, seven per cent." That would mean if compulsory sickness insurance, as advocated in that particular recommendation, becomes operative in each and every state in this Union, ninety-three per cent or 120,000,000 of our population would be so covered.

There are many, many objections to this type of insurance. We heard some of them last night in the address of your President-Elect. I would like to call your attention to one other. With a five per cent contribution on the part of the individual earning less than $3,000 a year and on the part of the individual employing such, between two and one-half to three billion dollars a year would be collected. That is rather a large sum. We know nothing about compulsory sickness insurance in this country. Our only means of drawing any conclusions in regard to it is by a study of the systems which have been operated in the old countries. Those of you who have read Mr. Crownhart's interesting book in which he published his conclusions after some months' study of the sickness insurance plans at present operating in Europe, will remember he stated that there was one non-medical employee for every 100 persons insured. If one figures out the percentage of non-medical employees on that basis for 120,000,000 people, one finds a bureaucratic personnel that will exceed in number any bureau of the federal government at the present time. Even assuming that we have one non-medical employee for each 1,000 or 2,000, we will still have a perfectly huge bureaucratic personnel. Is that objectionable? It is as far as the control of it becomes political.

I realize, just as well as anyone, that all governmental control in this country is, of necessity, political. We have two dominant political parties, and whichever is in power is responsible for governmental control during the time of its incumbency of office. I am also perfectly willing to admit that some of the administration which they afford this country is of the very best type, possibly as good or better than could be afforded by private agencies. However, here we are dealing with a highly technical, specialized type of work and service, and I submit that only doctors, by their years of education, years of training, and their years of experience in practice, are sufficiently familiar with the intricacies of medical care to judge good medical care and how it should be provided.

With a bureaucratic personnel of such size as I have indicated, which would change hands as each administration changes hands and which would afford opportunity for employment of the workers of a given political party, one can see that it would become venal or vicious or partisan, and the one thing to suffer would be medical care; that a good part of that two and one-half to three billion dollars would be devoted to the support and perpetuation of what virtually amounts to a political machine rather than to the care of the

individuals for whom the service was intended. Certainly, under such circumstances, a service given any particular group would not be good service. The American Medical Association, from the time of its organization to the present, has specified that medical care must be good medical care. It states, for instance, in one of its articles, that the duty of a profession, the chief aim or object of a profession, is the service which it can render to humanity; that financial consideration must be a subordinate one; that medical care must be good; that we should not have an inferior quality for the lower income group and a superior quality for those able to pay. Without going further into the objections that can be offered to compulsory sickness insurance, it seems to me that these which I have mentioned would be sufficient to condemn it in the minds of any thoughtful person.

I personally felt that the fifth recommendation was more economic than medical; that is sickness compensation, or the payment of compensation to the individual worker when ill, so that his family may have food and fuel and clothing during the time of his illness. Certainly that is a worthwhile objective. I do not think anyone would find any cause to disagree with it. The Americal Medical Association has this provision, that its members be relieved of the responsibility of saying when an individual was too sick to work or when he had recovered sufficiently to go back to work, so that his sickness insurance would terminate at that time. I think one can readily see the wisdom of that. John Smith might complain of a backache and his physician be totally unable to find any cause which would explain it. If the physician continued to certify that John's back kept him from work, he might stay away from work for six months and continue to draw his sickness compensation. On the other hand, if the physician certifies that John is able to work, then there are difficulties with his labor associates. In other words, the opportunities for collusion between the employers of labor, and labor, are so great that the American Medical Association felt the responsibility for this decision should rest upon a federal agent rather than upon the medical profession. Those who read "The Citadel" or saw the film will recall that the doctor lost practically all of his panel when he refused to certify that one of the mill workers had a backache of sufficient severity to prevent his laboring. The same thing would happen under this particular recommendation. It is to obviate such complications that this provision was included.

Following the meeting of the House of Delegates, a committee, of which I happen to be chairman, was appointed to confer with the interdepartmental committee. We have had two conferences with it, each lasting all day. Since no draft of the legislative enactment which would translate its recommendations into action was submitted, our discussions were, of necessity, limited largely to principles. Many of those were details and questions of programs, for instance, the $42,000,000 program for tuberculosis. I do not think anyone would object to that amount. Under that program, however, the government will necessarily participate in curative medicine to a certain extent.

If we are to control tuberculosis (and I am talking not as an ordinary surgeon but as one who is interested in this), any program which is going to accomplish our purpose must do so at its source. For instance, in our state, an analysis of the death reports from tuberculosis over a period of years showed that these people had been under the care of a doctor for an average of only six months. Everyone knows that an average of two years would elapse between the time of the infection with the tubercle bacillus and death. The conclusion then is that for eighteen months these people had been in daily contact with others, and a constant source of danger to them, as a result of their infection. If we are going to control tuberculosis, the program must be a case-finding one. At the present time I know of only one or two states with a sufficient number of beds for the treatment of tuberculosis. We have three such sanatoria in the state of Kentucky, with a waiting list running into the hundreds. I think that is true, with very few exceptions, throughout the country. Therefore if we initiate a case-finding program, we are going to find many cases of tuberculosis which must, of necessity, be treated in hospitals that have been erected and are controlled and directed by the government. That part will have to be accepted as inevitable.

One may go on to the cancer program which involves an allocation of $25,000,000 a year for the study of cancer and the control of cancer. If we could utilize our existing facilities, that would take up part of it, yet there must, of necessity, be special institutions devoted to the curative treatment of these patients as well as to the custodial care of hopeless cases. Again that will, of necessity, come under government control, and we must accept, in such instances, a certain amount of curative treatment and do it because we believe it to be in line with public policy and in the interest of public welfare.

The President, on January 28, sent his message

on the National Health Program to Congress, with a recommendation for its consideration and study. He said nothing about its passage—only consideration and study.

On February 23, Senator Wagner introduced a bill into the Senate. This has been referred to the Committee on Labor and Education. It is designed, presumably, to translate into activity the recommendations of the technical committee. Since this bill was formulated and introduced, there has been no meeting of the House of Delegates of the American Medical Association, so that the only authoritative body in the Association, representing its membership of 112,000 physicians, has had no expression of opinion upon the Wagner Bill. Such criticisms of it as I shall make represent solely my personal views and opinions and are not to be taken as representative of the Association and, certainly, not to be taken as representative of antagonism on my part toward the National Health Program.

Frankly, I believe it would be unfortunate for the good features of the National Health Program to be lost as a result of acrimonious discussion in regard to their translation into activity. At the same time principles and policies cannot be submerged in deference to expediency. The American Medical Association has never specified the amount of money it thought should be expended in the National Health Program, and I still feel that such is not one of the duties of the American Medical Association. However it is interesting to note that the Wagner Bill provides for an expenditure of $98,250,000 during the fiscal year of 1940, $223,500,000 in the fiscal year of 1941, and $334,000,000 during the fiscal year of 1942, with no limit during the fiscal years of 1941 and 1942 for administration, for the building of hospitals for the tuberculous and mentally ill, for sickness compensation, or for the medical care of the medically needy. After 1942, no limit is mentioned for the expenditure of any amount for the accomplishment of any purpose of the act. That is not a matter of medical interest but it is of interest to note the type of bill which has been introduced.

Nothing is said in the bill, for instance, about compulsory sickness insurance, but the measure provides for the allocation of grants by the Social Security Board to the individual states for the development of plans for the care of all the people of that state, conditional only upon the approval of the Social Security Board. It is totally silent as to the methods and means permissible, by which such medical care is to be given, whether on a statewide basis, state medicine, whether on a tax paid basis or fee for service basis. It leaves absolutely wide open the development of any type of medical care in any state, conditional only upon the approval of the Social Security Board. The American Medical Association has said nothing about the administrative agency which should be concerned, other than to mention that which I have spoken about before; namely, that the public welfare agencies should be simplified and correlated, and that the plans for medical care should be developed in the states under local responsibility and the medical and allied professions.

The Wagner Bill provides three administrative agencies, the Children's Bureau in the Department of Labor, the Public Health Service in the Department of the Treasury, and the Social Security Board. It seems that under such division of responsibility good medical care would be administratively impossible. I heard from one of my friends in Washington by phone, the night before I left home, that the territorial health officers had passed a resolution in which they condemned the control of the care of the indigent by the Social Security Board. The Social Security Board contains no doctors. It contains no one who is familiar with medical care, so that practically all agencies are opposed to the Social Security Board as an administrative agency in the medical care of the sick.

Considerable discussion has occurred in regard to the Public Health Service, because funds coming through the Public Health Service would necessarily filter into the states, through the state health officers. I would like to present both sides of this problem. The objection on the part of many is that the state health officer would thereby control the practice of medicine. Personally, I feel that objection would not hold entirely good in any state in which the health department is on a merit basis. In those states in which the health department is politically controlled, in which the health officer has been appointed not because he knows anything about public health or preventive medicine but because he or his relatives or his friends have rendered political service to the party in power, there could be political, partisan and venal control. On that basis the program would be objectionable. If Mr. Wagner or someone else would amend his act to say that only states having health departments organized on a merit basis could participate in the program, it might help a great deal to clean up many of the states of the Union.

Public health and preventive medicine is just as much a specialty of general medicine as is surgery, or gynecology and obstetrics. Unfortunately, in some of our states, our medical associations have not been aware of their responsibilities

in regard to public health at the hands of the state health department. Many of them have become aroused recently as a result of these developments and now are in the process of clearing them up. I have heard from health officers, on the other hand, that this plan is objectionable to some of them because they have felt they would be controlled by the state medical associations. I do not think that is true, for the reason I have mentioned. They are all doctors; they are all practicing a specialty of medicine. It is only by cooperation and correlation that we would be able to obtain the best results. Again, that can only come when it is organized on a basis of close affiliation with the medical bodies. In my own state, the health officer, the board of health and the state medical association are practically one and the same thing. It is true that the governor has the power of the appointment of the health officer and the state board of health, but only from a group selected and submitted to him by the state medical association, and the state medical association can remove any member at any time when it feels that, either from lack of interest or ability, he fails in the performance of his duty. With such an organization, many of the objections, I think, would be overcome.

Finally, the Wagner Health Bill does provide for advisory councils but it does not define their duties or their responsibilities. It does not define their authority, nor does it tell from which group these advisers are to come; whether from welfare workers, from Social Security employees, or from the medical profession. Again, it does not provide for utilization of the existing hospital facilities. It would be unfortunate if, as a result of competitive hospital building on the part of the program, our Catholic hospitals, our Jewish hospitals, and our Protestant hospitals, would be placed in the position of competing with free service at the hands of the government. These hospitals heretofore have afforded an opportunity for the philanthropic impulses of many, not only church members but those who although they have no church affiliations are interested in human welfare. It would be a great loss in every community if these hospitals should not be encouraged to develop, should not be given support in the utilization of their vacancies and should be placed in competition with government-owned and conducted hospitals.

These are some of the objections which I see to the Wagner Act. I might add that it makes no provision for the determination of needs of any of the services which it proposes to render. After all, that is one of the most important points, to know where a given service is needed, and to what extent it is needed. How can this be determined without the services of those who are interested? The medical profession, the hospitals, the nurses, the various welfare agencies and philanthropic agencies, the county judges and county courts, county boards of health, all are concerned. One should obtain from this group such knowledge as to where medical service, hospital service, diagnostic clinics, and extension of public health service, are really needed, and plans for the development of these services.

I would like to reiterate that my objections are purely and simply those of my personal view. They are not insuperable. It is perfectly possible that the act can be rewritten with the objectionable features eliminated and the good features retained. If so we will be permitted to obtain the objectives to which we are all committed; namely, an extension of public health service, child and maternal welfare, a wider diffusion of hospital facilities and diagnostic facilities, and the medical care of the medically indigent.

HYPERSENSITIVITY AS A FACTOR IN CHRONIC MONILIA VAGINITIS*

Ray E. Trussell, Iowa City

SKIN TESTING WITH COMMERCIAL OIDIOMYCIN

It is now well established that a marked growth of yeast-like fungi in the vagina, particularly in pregnant and diabetic women, may produce acute vaginitis. Such patients are usually treated satisfactorily with gentian violet, but even if untreated some experience spontaneous cure with termination of the pregnancy or after control of the diabetes.

In contrast to this type of severe vaginitis which is encountered only occasionally it is common to see women who complain only of vaginal and vulval itching and in whom cultures reveal no commonly recognized vaginal pathogens except a few "Monilia." Such infections are at times refractory to the usual fungicides and the itching and low grade inflammation persist. Since about 20 per cent of adult women harbor such organisms in the vagina without symptoms it is not clear whether the fungi are the cause of the chronic vaginitis, particularly in view of the fact that other organisms may produce a similar condition. It is generally believed that the Monilia are the causative agents and that their resistance to fungicides is only apparent, the chronicity of the infection being actually due to repeated reinfections from the rectum or some other focus.

*This is the thesis which was given the Baldridge-Beye Memorial Award in May, 1939. The author is a junior at the University of Iowa, College of Medicine.

Recently it has been suggested that certain of these women are hypersensitive to the fungi and that the itching and mild inflammation are manifestations of a local allergic reaction. Such a concept is attractive in that it explains the disproportion between the number of the organisms and the severity of the condition, since hypersensitive reactions are generally elicited by relatively small amounts of antigen (allergen). If this is the correct interpretation treatment should be directed toward desensitization (immunization?) when the fungicides are ineffective.

Logical experimental approach to this problem should begin with attempts to find a satisfactory means of detecting monilial hypersensitivity and to develop a test to serve as an indication for desensitization. Skin tests naturally have received consideration, and the dermatologic literature contains several reports on the use of a commercially available extract of a pathogenic strain of Monilia albicans called oidiomycin. This fungus is most commonly found in the vagina and is generally accepted as the usual cause of human moniliasis. Certain dermatologists[1] recommend the use of oidiomycin both for skin testing and for desensitization. The primary objective of the present study was to determine the skin reaction of apparently normal women to commercial oidiomycin as a basis for observations on those patients who complain of vaginal irritation but harbor only a few fungi.

EXPERIMENTAL MATERIAL AND METHODS

Two hundred women who were admitted to the University Hospital in the last two months of gestation for delivery care were subjected to the following procedures:

A. Skin tests. Commercial oidiomycin (Lederle) 0.1 of a cubic centimeter of a 1:100 dilution was injected intradermally into the flexor surface of the forearm and the test areas were examined after forty-eight hours. All erythematous and edematous reactions were recorded in millimeters.

B. Cultures. Swab cultures were taken from the mouth, throat, and vagina and inoculated onto the surface of Sabouraud slants. Fecal specimens were obtained digitally with the gloved finger and inoculated onto Sabouraud plates. All cultures were examined after forty-eight hours for yeast-like fungi. (Part of this phase of the work was done by Dr. R. F. MacDougal and R. Miller and will be reported separately.)

EXPERIMENTAL RESULTS

Although all erythematous and edematous reactions were measured in millimeters they are grouped for convenience as follows:

Negative—no reaction or a reaction five millimeters or less in diameter.

One plus—reaction six to ten millimeters in diameter.

Two plus—reaction eleven to twenty millimeters in diameter.

Three plus—reaction over twenty millimeters in diameter.

Four plus—reaction showing skin necrosis, regardless of size.

For reasons discussed below the erythema and the edema reactions are recorded separately in Table 1.

TABLE 1 REACTIONS OBTAINED BY SKIN TESTING 200 WOMEN WITH OIDIOMYCIN

	Erythematous reactions—200 women		Edematous reactions—200 women	
Negative	39	19.5%	57	28.5%
One plus	35	17.5%	99	49.5%
Two plus	61	30.5%	36	18.0%
Three plus	61	30.5%	4	2.0%
Four plus	4	2.0%	4	2.0%

Two hundred and thirteen of the 800 cultures taken (four from each patient) were positive. The large majority of the isolated fungi fall into the group loosely designated by Castellani as the genus Monilia (characterized by their ability to form mycelia and inability to develop ascospores), but now divided into seventeen genera by Dodge.[2] Most of the cultures are Monilia albicans. The distribution of the organisms in the 114 women yielding the fungi and the relation to skin reactivity in the entire study group are recorded in Table 2.

These findings are of significance in the present study only because they demonstrate the lack of correlation between skin reactivity and the presence of fungi in any of the four areas cultured. Many of the strongest reactions occurred in women culturally free of yeast-like fungi, and twenty-two women with positive cultures gave no skin reaction. This merely confirms similar observations already reported that the test is not diagnostic of the presence of the organism.

DISCUSSION

It would seem that the type of skin sensitivity to monilial extracts manifested by a delayed response to intradermal injection is analogous to tuberculin sensitivity. Observations show that it is not amenable to passive transfer and develops in association with infection as indicated by the following experiments also performed in conjunction with this study.

TABLE 2. SUMMARY OF SKIN TESTS AND CULTURES FOR YEAST-LIKE FUNGI IN 200 WOMEN

Positive culture—114 Patients		Skin tests with 0.1 cc. of 1:100 oidiomycin intradermally								
		Neg.	Eryth. 1+	Edema 1+	Eryth. 2+	Edema 2+	Eryth. 3+	Edema 3+	Necrosis 4+	Eryth. plus Edema neg.
M	18	1	6	13	4	3	7	1		
MT	11	3	3	4	1		1	1	1	
MTV	5	2		2	3		1			2
MTVF	11	3	2	7	5		1			1
MV	5			3	3		1			1
MF	2			1	1	1	1			
MVF	5	3				1	2			1
MTF	5		1	3	2	1	1			
T	5	1		3	1	1	4			1
TVF	2			1			2			1
TF	1		1	1						
TV	2		1		1	2	1			1
V	27	4	2	14	12	4	9	1		4
VF	11	2		2	4	4	5		1	3
F	4	3		1			1			
Negative Culture—86 Patients		17	19	44	24	19	24	1	2	3
Total.....		39	35	99	61	36	61	4	4	18

M, Mouth; T, Throat; V, Vagina; F, Feces; Neg., Negative; Eryth., Erythematous.

1. Prausnitz-Küstner skin reaction for circulating antibodies by passive transfer. In this test 0.1 of a cubic centimeter of serum from the most skin-sensitive patient in this series was injected intradermally into the flexor surface of the forearm of two non-sensitive individuals. Twenty-four hours later these areas and control areas on the opposite forearm were injected with 0.1 of a cubic centimeter of 1:100 oidiomycin. (Passive transfer is indicated by a reaction following the second injection while the control area is unaffected.) Both attempts were unsuccessful.

2. Experimental sensitization of rabbits. Four healthy white rabbits, each weighing approximately five pounds, were shaved on the back and tested with 0.1 of a cubic centimeter of 1:100 oidiomycin. These areas were observed after twenty-four and forty-eight hours and no reaction was noted. Each rabbit was then given a subcutaneous injection of 1.0 cubic centimeter of a suspension (900 million organisms) of a strain of Monilia albicans isolated from a case of thrush. The skin tests were repeated in two weeks and three of the animals gave one plus reactions. They were then reinfected with the same dose of organisms. After reinfection and a month's interval, skin tests elicited three one plus reactions and one two plus reaction. The strongest reaction occurred in the rabbit still showing signs of active infection. This demonstrates that sensitization to commercial oidiomycin develops in rabbits as a result of experimental infection with Monilia albicans. No report of experimental sensitization in the human has been encountered.

Further analogy may be drawn with tuberculin sensitivity in that hypersensitivity to Monilia is more widespread in the older age groups of the population. In this connection the following experiment, performed during the present study, is of interest. Twenty healthy newborn infants (five to six days of age) were tested with 0.05 of a cubic centimeter of 1:100 oidiomycin by intradermal injection into the flexor surface of the forearm. No reactions occurred in the group regardless of the mother's skin sensitivity. This might be taken to indicate that babies are not passively sensitized by placental transmission and also that they are not skin sensitive because they have not been infected with Monilia. The possibility has not been eliminated that the skin of the newborn is incapable of reacting with oidiomycin. In this connection it has been shown that a certain proportion of Schick negative infants do not have demonstrable diphtheria antitoxin in the blood stream. Similarly many babies born of Dick positive mothers will give Dick negative skin tests during the first few weeks of life. Among veterinarians it is recognized that tuberculin testing in calves is not absolutely reliable.[3]

Hill[4] tested 100 eczematous children with oidiomycin and found fifteen positive reactors (three under one year of age and three from one to two years of age). A control group of 60 non-eczematous children gave eight per cent positive re-

actors. Lewis, Hopper and Montgomery[5] have shown that the percentage of sensitive individuals increases with age irrespective of the presence of clinically evident infection. Other reports follow the same trend. In all probability the increasing evidence of sensitivity among adults is a consequence of the widespread occurrence of Monilia albicans.

The high percentage of positive reactors to commercial oidiomycin reported here and elsewhere may be due to cross reactions within the yeast-monilia group. Owen, Anderson and Henrici[6] who appended an extensive review of the literature to their own experimental observations, point out that "clinical and experimental studies indicate only a very slight degree of specificity within the yeast-monilia group, cross reactions being common." According to the report of the Council on Pharmacy and Chemistry[7] oidiomycin is defined as "the soluble broth culture products of Monilia albicans." Apparently no attempt is made to refine the material, possibly because it is intended for use as a "desensitizing agent in chronic ringworm due to Monilia albicans." Nevertheless the dosage recommended for desensitization depends on the size of the skin reaction obtained with an injection of 0.1 of a cubic centimeter of the 1:100 dilution.

In reading a tuberculin test, edema is generally regarded as more significant than erythema. Kerr, Pascher and Sulzberger[1] regard a slight to moderate "reaction" to 0.1 of a cubic centimeter of 1:100 oidiomycin as normal, a position also adopted by the manufacturers who designate a normal "reaction area" as eight to twenty millimeters in diameter. If a larger reaction is obtained a considerably weaker dilution of oidiomycin is indicated for desensitization. It is not clear whether "reaction area" applies to erythema or edema. In the present series, 96 per cent of the women had edema reactions ranging from none to twenty millimeters in diameter, but 32.5 per cent responded with erythematous areas ranging from 21 to 68 millimeters in diameter, and 9.0 per cent gave positive erythematous reactions in the absence of edema. This is obviously confusing and could lead to the use of weaker desensitizing doses than might be justifiable. According to Sulzberger,[8] however, the erythema should be counted as belonging to the "reaction area."

The hypothesis has been advanced that chronic vaginitis in the presence of relatively few fungi may be due to hypersensitivity. Ross [9] states that "Where there is any doubt as to the causative factor in vulvovaginitis, we resort to an intradermal test. Where the Monilia is the causative factor a local reaction will develop within a few hours and persist for as long as forty-eight hours. * * * In the more refractory patients, that is, those who have been treated over a long period of time by many different agents, we have employed vaccine therapy. Usually definite reactivation of the process in the vagina occurs and persists until the patient is desensitized." The results in the present study render the meaning of a positive skin test somewhat obscure. However, focal flareups such as are described by Ross are generally accepted as indicating that the desensitizing substance is identical with the factor causing the allergic reaction.

Jones[10] writes "When we first began this work we were impressed with the large number of women with Monilia in the vagina who exhibited none of the classical signs of Monilia vaginitis. Hence we resorted to skin testing in an effort to separate the patient with a true Monilia vaginitis from the common carrier, on the theory that the patients who complain have become sensitized. This we found was true in a large percentage of cases, but by far fails to explain all of them." He further states "Only chronic cases seem to acquire a definite skin sensitivity. The majority of patients with Monilia in the vagina will show slight, or no skin sensitivity." In the present study no correlation was found between the presence of vaginal Monilia and the skin reaction, but a large percentage of the women with positive cultures were skin reactors. The discrepancy between these results and those of Ross and Jones may be explained by the fact that they used homologous organisms for skin testing.

Possibly a difference in degree of hypersensitivity may exist between the skin and the vaginal mucosa and vulva. It is known that certain areas of the skin react more strongly than others. Clinically it is recognized that certain individuals skin-sensitive to one pollen may have hayfever due to another to which their skin is nonreactant or reacts only slightly. Similarly severe gastro-intestinal disturbances and asthma may be caused by certain foods which do not produce skin reactions.[11] Since Monilias are common invaders of the skin it is not surprising that a large percentage of adults are skin sensitive and it is not reasonable in the light of our present knowledge to infer that the sensitivity of the vaginal mucosa parallels that of the skin.

It is apparent that as an indication for desensitization a positive skin test in patients with chronic Monilia vaginitis will give limited information unless it can be shown that consist-

ently stronger reactions than normal, or focal flare-ups in the vagina, occur. This latter reaction has been noted in certain patients with cutaneous moniliasis, but in such instances the test is done in the same tissue which is infected. Other preparations and ways of testing should be employed in an effort to find a satisfactory test. Otherwise certain women with chronic vaginitis due to something other than the few fungi present may be given vaccine therapy without success and the concept condemned without fair trial.

CONCLUSION

A large percentage of adult women are skin sensitive to commercial oidiomycin. It would appear that the use of this fungus extract for skin tests would be of limited value in indicating suitable cases for desensitization of patients with chronic Monilia vaginitis on the theory that the condition may be on an allergic basis unless focal flareups or stronger skin reactions than normal can be shown to occur consistently.

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AN IMPROVED METHOD OF INDIRECT BLOOD TRANSFUSION

Donald C. Sharpe, M.D., Dubuque

Shortly after the discovery of the circulation of blood by William Harvey in 1616, blood transfusions were attempted. In 1660 Lohr at Oxford University transfused blood from one dog to another by means of a goose quill. Two years later Sir Christopher Wren and Archibald transfused a debauched man with twelve ounces of sheep's blood without fatality. In 1667 we have record of a transfusion performed by Jean Denys, the personal physician of Louis XIV, whereupon he gave the blood of a lamb to a fifteen year old boy.[1] In 1824 James Blondell of England reported a successful transfusion from one patient to another. It was in 1898 that direct blood transfusions were popularized by Crile.

Gallant strides forward in the field of blood transfusion followed the epoch-making work of Jansky and Moss on the agglutinins in blood. Direct methods in which the donor's artery was anastomosed with the vein of the recipient were soon replaced by more simple methods. Lindeman in 1913 devised a cannula, Unger in 1915 introduced a stopcock which further aided in the simplicity of the operation, and in the same year Lewissohn demonstrated the efficacy of adding sodium citrate to prevent coagulation before injecting into the recipient. With the progress of medical science there is the natural tendency toward simplification, without sacrificing efficiency, of whatever mechanics may be involved in any given technic. For our purposes here we propose to prove that this point is equally applicable in the indirect intravenous administration of citrated blood. In this paper we shall emphasize only the indirect types of transfusion since such methods are utilized by the greater number of physicians and are more efficacious, especially where use in the home, and without the necessity of one or more assistants, makes them more practical. We do not intend in this paper to discuss the indications or contraindications for blood transfusions.

Indirect blood transfusions may be classified as being either open or closed. Examples of the open type are:

1. The Kimpton-Brown Technic.[2]

2. Lindeman's technic of blood transfusion by aspiration and injection syringes. Normal salt solution is used in the syringes after each aspiration to prevent coagulation of the blood.

3. Syringe method of indirect transfusion or untreated blood by transcutaneovenous puncture in which a paraffined glass cylinder is used.

4. Lewissohn's technic in which sodium citrate is used as an anticoagulant. The sodium citrate and blood are intermingled and the mixture then injected intravenously into the recipient.

The closed type of indirect transfusion is one which is rapidly gaining in favor and performance. The principles involved in this method are first, the ability to create suction in obtaining blood and citrate, and second, the availability of an apparatus which would permit of blood administration without transfer to any other receptacle. To these principles we add the possibility of one operator, without additional aid, being able to draw, mix and administer the blood. Such men as Lewissohn, Lundy and others have proved that citrated blood is admirably suited to the great majority of conditions in which transfusion is indicated.[3]

The essential features of the closed apparatus are as follows.[4] A standard 500 cubic centimeter vacoliter with screw top is used to which is attached an aluminum alloy handle which holds firmly in place a rubber cork for sealing the apparatus. (Fig. 1.) Two holes are provided in the cork into



Fig. 1. The assembled set converted into a blood dispensing apparatus.

which may be inserted a glass tube and a rubber bulb (such as is supplied for blood pressure apparatus with automatic ball bearing valves). Later, upon withdrawal of the bulb, the usual glass fitting of an intravenous tubing outfit is inserted. Too, the vacoliter flash is provided with a bail which is used for support of the bottle while the blood is administered. The entire system is autoclaved with bulb, tubing (glass and rubber) and adapter ready for use.[5] Further, the entire outfit may be stored in a canvas bag ready for home, office or hospital service.

In obtaining the blood, the sterile apparatus is unwrapped and a number fifteen or sixteen gauge needle is inserted into the adapter, and by gentle compression of the bulb a few times the citrate



Fig. 2. Mechanism by which citrate is drawn into the unit.

(sterile 2.5 per cent) may be drawn into the vacoliter (Fig. 2). About ten cubic centimeters of the citrate are used for every 100 cubic centimeters of blood. It has been the writer's recommendation to suction 40 cubic centimeters of citrate into the vacoliter before the blood is drawn, and then to draw the remaining ten cubic centimeters of citrate after the 500 cubic centimeters of blood are in the bottle for purposes of irrigating the tubing from the donor's vein.

For taking blood from the donor, a sphygmomanometer cuff must be used on the donor's arm to act as a tourniquet with the pressure set approximately at the diastolic level. The arm is now prepared with the antiseptic solution or solutions of choice; novocain infiltration as a small intradermal wheal, and we are ready to insert the needle into the donor's vein. With one hand the needle is steadied in the vein while with the other hand the citrate and blood may be mixed by a gentle rotary motion of the bottle; in the meantime the rubber bulb is given an occasional compression to maintain the necessary negative pressure (Fig. 3).



Fig. 3. Withdrawal of blood from the donor.

When the desired amount has been obtained, the sphygmomanometer pressure is reduced and the bulb is removed from the cork. The glass tubing is pushed down to serve as an air vent when the bottle is later inverted. A regular intravenous tubing set with filter drip is inserted in the hole from which the rubber bulb was taken. Then the bottle is inverted and suspended by means of the bail.

This sterile blood dispensary set is designed for the infusion of citrated blood and normal saline (Fig. 4). The addition of facilities for administering saline makes for greater economy and safety. Saline rather than blood is used to remove air from the tubing, and to ascertain correct entry of needle into the vein of the recipient, thus elimi-



Fig. 4. Infusion of citrated blood and saline into vein of the recipient.

nating loss of valuable blood and making proper placement of the needle easier. When the desired amount of blood has been given, the saline may again be used to wash all blood remaining in the filter drip and tubing into the vein. The infusion of saline may or may not be continued as desired. The flow of either blood or saline may be at the rate of 150 to 225 drops per minute. This may be regulated by a clamp below the filter drip.

In conclusion, the advantages of this method are: first, simplicity; second, no transfer of blood from one container to another; third, greater sterility of blood; and fourth, transfusion with this technic may be performed by one operator only.

SUMMARY

1. Various methods of indirect blood transfusion are listed with a detailed discussion of the newest modification.

2. The method consists briefly of starting an intravenous vacoliter of saline administration on the patient;[6] drawing the blood from the donor into a prepared vacoliter bottle with suction bulb; and then substituting the blood vacoliter for the saline vacoliter, without removing the needle in the vein of the patient.

3. The advantages of this method are enumerated.

4. Sterilization and care of equipment is described.

5. This method should increase the use of blood transfusions for convalescent nutrition and strength, and should also prove valuable in emergencies.

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HYDRONEPHROSIS RESULTING FROM URETEROPELVIC OBSTRUCTION*

L. E. Pierson, M.D., and E. M. Honke, M.D.
Sioux City

INTRODUCTION

The loss of kidney tissue constitutes a serious menace to the economy of bodily function. To lose this tissue through unavoidable causes, such as neoplasms is perhaps, to be expected and tolerated as a necessary evil, but to lose this tissue when an earlier diagnosis and proper treatment would have prevented such loss, is not compatible with the efficient practice of medicine. With this thought in mind, your attention is called to a group of lesions which produce a partial obstruction at the junction of the upper ureter and renal pelvis, and which, if allowed an unrestricted development, will eventually destroy the entire kidney. I refer especially to such lesions as anomalous renal blood vessels which produce obstruction by their abnormal proximity to and pressure on the upper ureter and fibrous bands which bind the ureter intimately to the renal surface. In a large proportion of such cases, the diagnosis is not made until the loss of kidney tissue has become so far advanced that nephrectomy is the only possible treatment. It shall be the purpose of this discussion to emphasize first, the insidiousness of its onset and development; and second, the relative frequency of the lesion.

HISTORY

The first surgical attempt to correct this condition, and thereby conserve the remaining renal tissue, was performed by Trendelenberg in 1886, but failure resulted because of infection. Five years later, Kuster made the first successful attempt by reimplanting a divided ureter into a new opening

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in the renal pelvis. Mayo, Braasch and MacCarthy reported the first series of such cases in 1909 with twenty cases, in thirteen of which anomalous vessels had been divided with good pyelographic and clinical results. In 1921, Von Lichtenberg devised a new method of anastomosing the ureter and renal pelvis, a method which has stimulated the interest of many American urologists. The wide variety of procedures developed since that time were reviewed in a symposium held by the American Urological Association in Minneapolis in 1937. The problem, as it presents itself today, is not so much a matter of what operation is necessary for relief, but the performance of that operation before the involved kidney has been completely destroyed.

PATHOGENESIS

More detailed studies of hydronephrosis have demonstrated that anomalous vessels constitute one of the most common, single etiologic factors. Several investigators have recently called attention to the disturbance of normal peristalsis of the



Fig. 1. Retrograde pyelogram showing characteristic sickle-shaped deformity in ureter at the point of obstruction.

ureter, by the pulsations of an adjacent blood vessel, even in the absence of intimate contact. According to Quinby, this is based on the postulate that pelvic and ureteral peristaltic waves are of myogenic, and not neurogenic origin; and, by its constant beating, the aberrant vessel causes sufficient interruption of these waves, through a period of years, to cause dilatation. Those anatomic changes, which are produced in kidney structure, as a result of urinary back pressure, are known as hydronephrotic atrophy. Hepler has made detailed studies of these changes and has shown that they are essentially the same, whether the obstruction is complete or partial, permanent or temporary, high or low in the ureter. Any variations in development are either in the rate of development or in the degree of damage done to renal parenchyma.

Contrary to a common belief, complete and permanent obstruction to the kidney rarely produces primary renal atrophy from anuria. In several hundred experimental ligations on dogs, by Hepler, such a change occurred in only two cases. The usual result is a progressive hydronephrotic or pressure atrophy of the kidney, which is proportionate to the duration of obstruction, other factors being equal. Continued urinary secretion is essential and this is dependent on reabsorption in the renal pelvis of its contents, which takes place through the lymphatic vessels and tubules. According to Hepler, "There has to be a counterplay between urinary secretion and pelvic absorption, at such rates as to permit secretion to continue and yet to maintain an intrapelvic pressure sufficiently elevated to produce the effect known as hydronephrotic atrophy". In the case of incomplete obstruction, the same conditions govern hydronephrotic development, with the additional factor of intermittent urinary outflow through the ureter, further enabling urinary secretion. In other words, continued urinary secretion is not dependent entirely on the reabsorption in the pelvis. For this reason, hydronephroses due to incomplete obstruction are likely to become larger than those from complete obstruction. Hence, anomalous vessels usually produce large hydronephroses.

The mechanics of pelvic dilatation, due to increased intrapelvic pressure, have been described in detail by Hepler. Generalized distention of the tubules follows pelvic distention with a consequent compression and thinning out of the arterial tree. Nutritional changes then set in with tubular collapse, anemic atrophy and general tissue relaxation, which changes are in proportion to regional blood supply. According to Hepler, back pressure is the primary and essential factor, but anemic atrophy is the more active and controlling factor.

After the obstruction is removed, the extent of repair and restoration of function are dependent, to a large extent, on the improvement in circulation. Those areas supplied by larger vessels will improve more than areas supplied by smaller vessels, some of which will be damaged beyond repair. Return of circulation enables regeneration of less damaged glomerulo-tubular units. The process of hydronephrotic development and the process of repair are both greatly influenced by infection. Reabsorption is markedly reduced in a pelvis whose membrane has been infected. Regeneration of parenchyma and improved circulation are less active in a parenchyma which is scarred from infection.

INCIDENCE

The clinical application of this discussion is based on a series of twelve patients in whom anomalous vessels or fibrous bands were found to have produced hydronephrotic degeneration in one or both kidneys.

Of twelve cases, the average age was found to be thirty-two years, with fifty per cent of the cases occurring between the ages of twenty-three and twenty-eight years. Mayo, Braasch and McCarthy reported an average age of twenty-two years; Henline, an average age of thirty-two years; and Higgins, an average of thirty-five years. All such series indicate that the damage becomes evident during the early years of life. Males predominate to the extent of seventy-five per cent, or nine cases in this series of twelve. Henline reported seventy-eight per cent in males.

Evidence of bilateral obstruction could be demonstrated in only three of the twelve cases. In such an event, the patient is in grave danger when the diagnosis is delayed, as is well illustrated by two of our cases. One case was inoperable, and the other patient died from uremia sixteen days after the operation, in spite of the establishment of free drainage in the only functioning kidney. Unilateral obstruction occurred in the right kidney six times and in the left kidney three times. An abbreviated analysis, therefore, indicates that the lesion is found most often in a young male, and most likely on the right side.

SYMPTOMS

Hydronephrosis, as a general rule, rarely produces a characteristic symptom which can be called typical. This statement applies particularly to the hydronephroses resulting from anomalous vessels, and is no doubt due to the fact that such an obstruction develops slowly, as compared to those hydronephroses resulting from such agents as calculi or tumors. In fact, urinary symptoms themselves are not commonly found. Of twelve cases, only three had complaints directed to the urinary system, and all of these presented complications which were directly responsible for those symptoms. A sixteen-year old boy developed hematuria after a fall. Another gave a long history of frequency and urgency of urination which followed a gonorrheal urethritis. He entered the hospital with a well developed uremia, the result of bilateral hydronephrosis. The oldest patient of the series, with one hundred renal calculi, had noticed frequency and nocturia for at least one year. As a general rule, the most frequent symptoms were pain in the back, nausea and vomiting. This pain is not of the renal colic type, but more often of a dull ache and quite persistent in nature. It is usually worse after exercise; and, consequently, associated with sprains or lumbago in the mind of the patient. Radiation of the pain downward and anteriorly often confuses the picture with appendicitis. Three of our patients had undergone appendectomy without relief. One patient with nausea and gastric distress had been on ulcer management with no relief.



Fig. 2. Retrograde pyelogram showing evidence of upper ureteral obstruction without sickle-shaped deformity.

DIAGNOSIS

The first and most essential requirement for diagnosis is a suspicion of disease in the upper urinary tract. Without this suspicion, a proper urologic examination will not be obtained. Such an examination consists of pyelographic studies, both by excretory and by retrograde approach. A large number of cases will show no function on the involved side as demonstrated by excretory urography. The cystoscope usually reveals a normal-appearing bladder and both ureters are usually catheterized with no obstruction, although urinary drainage from the involved side is not commonly obtained. Appearance of the retrograde pyelogram depends upon the degree of obstruction by the anomalous vessel. If this is complete, dye will not enter the renal pelvis and only a ureterogram is obtained. However, the usual picture shows a dilated renal pelvis either partially or completely filled. A characteristic sickle-shaped curvature of the ureter is often seen immediately below the ureteropelvic junction. This represents the actual impingement of the vessel on the ureter and is pathognomonic.

ASSOCIATED PATHOLOGY

The most common complicating conditions encountered are infection and calculous formation. Infection is the usual eventual result of urinary

obstruction and may take one of three forms. Pyelitis, with its usual chain of symptoms, is most common. These usually respond to the re-establishment of drainage. A more serious type is the cortical infection, or infection of the kidney tissue proper, in the form of numerous foci or abscesses. A third, and extremely serious type of infection results in the case of blood stream involvement. Our only patient with this infection died ten months after operation of a streptococcus blood stream infection. This case also illustrated an additional type of complication, namely, calculous formation. At operation, thirty-four calculi were removed from the hydronephrotic left kidney. The oldest patient of this series, a female sixty-five years of age, was found to have approximately one hundred calculi in the dilated pelvis. Both of these calculous formations occurred on the left side.



Fig. 3. Hydronephrotic kidney removed from sixty-four year old female. Contained 100 calculi in pelvis. A. Toothpick in ureter. B. Toothpick in anomalous vessel. C. Dilated pelvis (partially collapsed after being opened). D. Thin rim of renal cortex.

TREATMENT

When it is evident that a continuation of the existing conditions will result in loss of kidney tissue, a definite plan of treatment is indicated. This plan resolves itself into two possibilities. On the one hand, if no renal function remains, a nephrectomy is indicated. On the other hand, if the kidney function is only partially destroyed, the obstruction must be relieved permanently in whatever manner best suits the individual case, considering both the patient as a whole, and the local pathology. In young individuals with a longer life expectancy, every possible attempt should be made to preserve the diseased kidney, provided it is not completely destroyed. Numerous types of plastic operations, designed to carry the ureter away from the obstruction, have been devised. Ligation of large anomalous vessels is not recommended, since they are usually end arteries and such ligation will often produce renal atrophy or cortical necrosis. In the female, the possibility of future pregnancy, with its additional strain on the kidneys, must be seriously considered. In those individuals in whom time is an important factor, a nephrectomy may be justifiable rather than an attempt to save a badly damaged kidney, since the latter procedure usually requires a long period of drainage. In any restorative procedure, the control of infection is most essential for its success.

RESULTS OF TREATMENT

Of the twelve patients in this series, eleven were operated upon with no surgical deaths. One male, thirty-three years of age, who was admitted to the hospital in a state of uremia from a bilateral involvement, died sixteen days after an emergency pyelotomy. Another male, twenty-four years of age, died ten months after successful plastic operation, the cause of death being a streptococcus viridans blood stream infection. One patient refused operation. A more significant observation is the fact that of these twelve patients only two were able to save their afflicted kidney and a third is still on drainage. Six persons, or 50 per cent of the entire series, each lost a kidney and two lost their lives from complications as described above. Higgins, in summarizing his series, made the following statement, "The most outstanding point in this series of cases operated upon, is that such a large number of patients had to submit to nephrectomy for relief of their symptoms."

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Discussion

Dr. Jennings Crawford, Cedar Rapids: In any case of hydronephrosis a complete study of the entire urinary tract is necessary. The term hydronephrosis presupposes a partial obstruction of the ureter, of more or less degree. In fact, the largest hydronephroses occur in cases of incomplete strictures of the ureter, slowly growing tumors pressing upon the ureter, movable stones, etc. Unilateral hydrone-

phrosis is usually due to some obstruction above the urinary bladder. Some few cases, however, are obstructed by diverticulum of the bladder wall, cyst formation at the vesical end of the ureter, tumor and stone of the bladder, etc.

The mode of production of a hydronephrosis has been the subject of much experiment and investigation. The primary cause is obstruction and the secondary and the most important factor is the effect of back pressure in the circulation in the kidney. Back pressure produces ischemia with resulting atrophy of the renal substance.

Experiments by Hinman and Brown have shown that when the intrapelvic pressure is raised, even to a slight degree, part of the pelvic contents passes into the venous circulation of the kidney by means of anastomoses which develop, by a means not fully explained, in the terminal sulci of the calices. While the amount of urine escaping by this pyelovenous back-flow is not sufficient to prevent the development of a hydronephrosis, it does constitute a partial safety valve and allows the kidney to continue secreting a certain amount of urine even in the presence of obstruction. The flow of urine into the blood stream is of little importance, since the situation is the same as though the urine had not been secreted, and the substances composing it are removed by the other kidney if it is functionally efficient.

Accordingly in cases of unilateral hydronephrosis the principle of renal counter-balance must be considered. In some cases the opposite kidney has already assumed largely the total renal function. This principle accounts for some disappointing results in the treatment of unilateral hydronephrosis. Although the cause of the obstruction, whatever it may be, is carefully remedied, the kidney fails to respond. The opposite kidney continues the major renal functions; the hydronephrotic kidney continues further atrophy, and in the end requires nephrectomy. For this reason every case of repair of a unilateral hydronephrotic condition should be observed for a long period following treatment. Some failures are explained by subsequent infection, or unilateral anuria.

The size of a hydronephrosis is not a measure of its function. A moderate hydronephrosis may be functionally worthless, while a large hydronephrosis may be worth repairing. In early hydronephrosis there is usually little loss of function and the principle of renal counter-balance has not yet become a factor. These are the cases to which Dr. Pierson refers when he urges accurate diagnoses and early treatment.

In any given case of hydronephrosis there may be several causes for the obstruction, and the interpretation of the cause may well depend on the individual urologist. Thus ptosis of the kidney with angulation of the ureter might be treated by one practitioner by rest in bed and abdominal supports; another might achieve results by a nephropexy; still a third might obtain results by freeing the upper portion of the ureter from bands and adhesions, combining this or not with fixation of the kidney. Furthermore, the clinical interpretation of the various factors will differ in the various types of practice according to the preponderance of men, women and children concerned. Kelly in 1914 in his experience with female urology placed "abnormal movability of the kidney as undoubtedly the commonest single cause of hydronephrosis." Young in 1926 in an experience in male urology reported 122 cases of hydronephrosis from supravesical causes, 22 of which were bilateral and caused by calculi fifteen times (renal nine, ureteral six), stricture 27 times, including ureteropelvic 27 times, and movable kidney with aberrant vessels only twice in 44 kidneys. In the 100 unilateral cases of hydronehrosis, calculi were found in 39 cases (renal 24, ureteral 15), ureteral stricture in 46 cases (including ureteropelvic), movable kidney four times and no cause in nine cases.

Accordingly we may affirm, without criticism intended, that the interpretation of the cause of hydronephrosis may vary greatly, so that the same case of hydronephrosis may be regarded by one urologist as the result of stricture, by another of movability of the kidney, and by another of aberrant vessels or kinks. Stone as an obstruction is usually a matter of late appearance, but assumes primary importance often as the foremost factor in further obstructing the outlet of the urine.

However, in the last few years it has been more frequently observed by various urologists that the crossing over of the ureter by aberrant vessels with resulting obstruction to the ureter is a factor to be considered. Lowsley in defining movable kidney enumerates ureteral kinks, hydronephrosis and renal torsion as pathologic conditions which would be induced by the condition coming within the definition. He states "if anomalous renal blood vessels are present, a finding not at all uncommon when the kidney is abnormally mobile, kinking of the ureter is very likely to take place."

Dr. Pierson is to be congratulated on his careful diagnosis of these twelve cases, his appropriate treatment of them, and the gratifying results.

THE TREATMENT OF FRACTURES OF THE SPINE*

Harold R. Conn, M.D., Akron, Ohio

Although a relatively common injury, accurate statistics as regards the incidence of fractures of the spine in the United States are not available. It has, however, been estimated that every forty-five minutes some unfortunate person sustains such a lesion. Less than twenty-five years ago an overwhelming proportion was the result of mining accidents and therefore the early statistics give the impression that these fractures were limited almost entirely to adult males. Safety campaigns, the education of employees and more

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rigid mine inspections have decreased the industrial lesions, but this is more than offset by the automobile which is today responsible for the outstanding number. The present fractures, therefore, are not limited by sex, race or locality and as regards age, only flexible youth escapes.

The mechanics inducing spinal fractures are well understood, the majority occurring as the result of forced hyperflexion or jack-knifing of the spine. Frequently in an unconscious effort to escape, the pelvis or the shoulders are rotated so that combined with the compression or squashing of the anterior elevation of the body there is a lateral or torsional flattening. Less often, because of the strength and resiliency of the combined posterior ligaments, the pedicles are fractured. Direct violence is often responsible for fractures of the spinous processes, indirect violence for fractures of the transverse lumbar processes, and transmitted violence through the legs or pelvis may induce fractures of the low lumbar vertebrae. The frequent association of os calcis and low lumbar fractures is proof of the effect of transmitted force. Hyperextension of the spine induces the most serious lesions. The intra-articular processes and pedicles are usually involved with a consequent loss of stability, so that luxation and cord damage is always possible and frequently present.

Fractures with injury to the spinal cord offer a serious and complicated problem which together with pathologic fractures are outside the scope and limitations of this paper. The purpose here is to discuss the transportation, the reduction and the rehabilitation of the uncomplicated cases which can and should be well treated by the surgeon not professing to have special knowledge or training in orthopedic surgery. The required special apparatus is inexpensive and simple in construction and the details of the reduction and the aftercare are not exhaustive.

Since vertebral fractures occur with such frequency and in such a wide age group, often in relatively isolated localities where the transportation is not only difficult but hazardous, they present the local surgeon with a pressing invitation to undertake their care. The prolonged convalescence works a personal and economic hardship where the patients are moved to a distant and expensive institution and there is the natural dread to combat of being sick and away from friends and family. As a rule following the reduction and a few days of hospitalization, the patient can be safely transferred to his own home where simple nursing care is all that is demanded. Perhaps, however, the most valid reason for treatment by the local surgeon is the danger of transporting an unreduced and often not completely diagnosed vertebral fracture any considerable distance. Those fractures which require special skill are happily not those most frequently encountered. No unfailing rule can be given for the selection of the lesions which may be adequately treated by the surgeon with a minimum of experience and those which had best be directed to colleagues with special training. However, the dangerous ones are those showing damage to the spinal cord, cervical fractures where there is any tendency toward luxation of one or more segments, most of those lesions where there is x-ray evidence of fracture of the pedicles or the intra-articular processes, high multiple fractures in the dorsal region and all of those cases where there is a possibility of narrowing of the exits of the peripheral nerves or where callous formation may subsequently involve the neural exits. There is another small questionable group in which there is a divergence of opinion among orthopedic surgeons in regard to the proper treatment. One side believes that all of these fractures should be submitted to early operative fusion, while the other holds that operative fusions are unsatisfactory as regards the final result; therefore, they lean to conservative treatment. These debatable fractures include those in which there has been a rupture of the nucleus pulposus or sufficient damage to assure complete absorption of the intervertebral disc. There is no doubt that the nucleus pulposus plays an important part in destruction of the intervertebral disc, because the latter is without nerves or blood vessels and has little if any power of repair. The nucleus if ruptured causes in addition to destruction of the disc an absorption of the underlying spongy bone which is not always readily visible in the early x-ray studies. If the dissolution and destruction of the intervertebral tissue is adequately severe, prompt healing and a relief of pain may be anticipated by reason of an early bony bridging or fusion of the opposed spinal segments. Unfortunately in a considerable number of these cases the cartilaginous remnants prevent complete fusion and the result is a distorted and roughened joint with just enough retained mobility to assure enduring pain and muscle spasm. Incidentally, injury to the nucleus pulposus which is irreparable if rupture occurs is the cause of much misunderstanding and some litigation. The early x-ray films are likely to be almost negative, but the destruction of spongy bone and the disappearance of the intervertebral disc cause delayed changes in the shape of the body. The films made some weeks after injury will then disclose the typical deformity of a compression fracture. The possi-

bilities for trouble from these injuries is clear, and it is prudent to be on guard about the ultimate x-ray findings and the result wherever the early films suggest damage to the intervertebral structures.

TRANSPORTATION

The treatment of spinal injuries should begin at the time and the scene of the accident. Primarily every physician should constitute himself a teacher of police, ambulance attendants and the general public in regard to the handling of back injuries. Thomson has already presented an excellent monograph on the subject deserving wide publicity, but it need not be quoted here in detail. Condensed it instructs the overenthusiastic and sometimes innocent bystander not to pump-handle the extremities, not to try to stand the victim of a roadside accident up, and not to pick him up by the shoulders and knees, thus allowing the back to sag. Using the knowledge that the preponderance of fractures are of the flexion type and that the common anterior ligament is amazingly strong, the patient is rolled on a blanket in the prone position and carried face down, not to the nearest drug store or to some hospitable neighbors, but by ambulance to the x-ray department of the nearest and best equipped hospital. Here the ardor and enthusiasm of the x-ray technicians should be directed by previous instruction, because often a patient perfectly handled by the ambulance attendants and the police has eluded the emergency room crew and reached the x-ray department only to be turned on the back and lifted from a wheeled stretcher to the table with the mid-back sagging hopelessly. Even worse, patients suffering from mild shock have been asked to crawl, walk or leap from the stretcher to the table under their own power. Not infrequently the victim, and the word is deliberately chosen, is asked to sit up in order that the resulting pain will help determine the level of injury and so permit a sharper focus.

Generally speaking, in cities where police and ambulance drivers have been instructed, the extramural handling is safer and more comfortable than that accorded after admission to the hospital. The early x-ray films should be only roughly diagnostic; two or three comprehensive anteroposterior and lateral views should be quickly taken and the patient hurried to bed. Here again a perfect receiving room and x-ray performance may be ruined by the sympathetic nurse who holds that the only comfortable position for a lame back is one of acute flexion accomplished by pillows approximating the chin and knees. Perhaps it is well to abandon an involved explanation as to why fractures of the spine should not be flexed, and concentrate on a simpler and apparently more comprehensible axiom, namely, that it is wrong to ask a patient to lie on a painful back. The average well used hospital bed generally sags to such a degree that when the patient is placed face down for a few hours, spontaneous reduction of mild compression fractures is not uncommon.

ANATOMIC CONSIDERATIONS

As has been stated, the forces causing fracture of the spine are usually flexion beyond the physiologic limit and a degree of torsion, the two stresses producing flattening of the anterior portion of the vertebral body and an associated lateral deformity. The extremes of flexion might involve the vertebra posteriorly but usually fractures appear in the intra-articular processes, the laminae, the spinous and the transverse processes as the result of extreme hyperextension. Fractures of these structures might be expected far more frequently if it were not for the amazing strength of the common anterior ligament which checks hyperextension. Fractures by flexion which relax the anterior ligament exceed greatly those induced by hyperextension, but even so in 2,700 autopsies Schmorl found the common anterior ligament ruptured only three times. Obviously it is this remarkable tensile strength which prevents frequent anterior displacement at the moment of fracture in the hyperextension lesions and makes relatively safe the use of forced hyperextension in the reduction of the flexion deformities.

In the hope of learning something of the mechanics involved in the production of these flexion or compression fractures, the spines were removed from several cadavers, the spinal muscles were excised and the ribs sawed about three inches lateral to the costovertebral articulations. This length of rib was retained in order to preserve the fascia and the posterior portion of the intercostal muscles which contribute to the support of the back. A limited personal experience indicates that the twelfth dorsal and the first lumbar segments were most frequently fractured, the eleventh dorsal and the second lumbar segments being next most often involved, and thereafter fractures occurred in a somewhat haphazard manner in the mid-dorsal region and in the cervical spine. Numerically the fifth lumbar is probably involved even more frequently than are the eleventh dorsal and the second lumbar. However, it is the writer's experience that fractures of the fifth lumbar vertebra are not so often the result of hyperflexion as of transmitted violence. In the anatomic study no effort was made to induce fractures by direct or indirect violence applied to the

low lumbar spine; on the contrary, only the question of hyperflexion was investigated.

The most striking finding was that with the head sharply flexed, the ligamentum nuchae was tightened and that its fibers were continuous with the supraspinous ligament. The well known normal rigidity of the dorsal spine then entered as a factor, so that as the flexion was continued, the head, the cervical and dorsal spines all became a rigid lever stiffened by the taut supraspinous ligament, thus multiplying the power applied against the first flexible portion of the back which is composed of the eleventh and twelfth dorsal and the first and second lumbar vertebrae. The normal physiologic mobility of the lumbar spine serves partially to protect the lower lumbar vertebrae from damage. As the flexion force was continued it was found that the ligamenta flava remained intact until sufficient force was applied to induce a fracture of the laminae at the point of attachment of the ligaments. It was interesting to note that the level of fracture could be varied almost as easily by a division of the intercostal fascia and muscles as it could by a division of the supraspinous ligament, an observation which probably explains why fractures of the ribs and the transverse processes of the vertebra are frequently associated with compression fractures of the bodies.

The anatomic experiment further showed that with a separation of the ligamenta flava the capsules of the intra-articular process joints were readily torn, and that if the force was carried further there was an extreme likelihood of posterior luxation of the vertebral body with a consequent damage to the cord. Rupture of the nucleus pulposus occurred wherever sufficient force was expended to damage seriously the intervertebral disc. In none of the cadaver spines artificially fractured was there any tendency for bone fragments to pierce or damage the relaxed common anterior ligament, laterally. However, small fragments were frequently forced into a position which damaged, or would in life have irritated, the sympathetic chain.

The impression was gained that the ligamentum nuchae acting with the supraspinous ligament served to protect the upper dorsal region. Accordingly the supraspinous ligament was divided, and invariably when flexion force was applied to the head, high dorsal fractures were produced. Apparently the conclusion may be drawn that high or mid-dorsal fractures are frequently the result of a tear of the supraspinous ligament, the stronger ligamentum nuchae remaining intact to re-enforce the cervical spine which then acts as a short lever. It is, furthermore, logical to assume that because of the immobile character of the upper dorsal spine the force is not expended on one segment but more frequently on several, a heretofore somewhat puzzling observation, for we have all noted that middle and upper dorsal lesions were frequently multiple and generally not so severe as the lesions found lower. Although the studies were not exhaustive they have served to explain some of the previous puzzling features in regard to the location and the character of the lesions.

REDUCTION METHODS

The monograph of Arthur Davis regarding the reduction of compression or squash fractures of the vertebral bodies is conceded the most important fracture contribution of the past decade. Ten years of experience has, however, modified the early concepts and there are, therefore, additional conclusions, a clarification of early indefinite opinion and possibly some new ideas worthy of presentation. For about 2,100 very long and stupid years no attempt was made to open up a crushed vertebral body and allow it to fill in with new bone because we believed that cancellous bone healed by the production of fibrous tissue rather than true callus, and that a correction of the deformity followed by prolonged recumbency would prove wasted pain and time with the first active flexion of the spine. The experience with tuberculosis of the spine and corrective jackets might have shown any or all of us the light, but only Davis saw it and so saved thousands from enduring invalidism.

There is no intention to detract or minimize his contribution when a page is lifted from Hippocrates who described compression fracture clinically and advised against interference if paraplegia was present and wisely avoided direct pressure over the posterior deformity. Please note, the reduction methods of two thousand or more years ago. A heavy plank was sculptured to fit the patient's back in the position of slight hyperextension. The patient was then placed face downward between two trees; straps or ropes were attached about the hips and shoulders and by means of compound pulleys, a device well understood by the ancients, the patient was swung hammock-like free of the ground. Still avoiding the palpable kyphos, pressure was made lateral to the spine at the level of the fracture, both traction and hyperextension being increased until the kyphos disappeared. The sculptured block was then applied, traction relaxed and the patient turned supine for a long period. Let me commend to you here the use of pulley traction and less hyperextension in the treatment of severe or apparently irreducible spinal fractures. Seemingly we must

learn from trial and error and hence we have been late in accepting the dictum of our predecessors. Fractures in the low dorsal and upper lumbar regions have yielded well to reduction by hyperextension, but in the low lumbar lesions where flattening of the whole body was present, as often results from transmitted violence, in lesions of the middle and upper dorsal regions where because of the natural rigidity hyperextension was impossible, and in all those fractures where the pedicles or intra-articular processes were damaged and the hyperextension had to be limited by caution, the attempts at reduction generally ended in disappointment or complete failure. Traction in these cases is not only logical but safe, and thus far we have not tried to improve upon Hippocrates; we use a strap across the back and under the arms and a pelvic belt to which are attached anterior and posterior straps. As yet the number of cases is limited but the early results have been excellent. Hippocrates must have learned much from the preceding 10,000 years of warfare, even if the next one hundred generations forgot him and rediscovered exactly nothing.

The original reduction method which made use of the complicated split plaster jacket with turn buckles has been largely superceded by rapid hyperextension manipulations, but while the easier technic gives a wider application it is not certain that the more serious and intractable deformities have benefited. Certainly the adjustable jacket was positive in its corrective force which could be perfectly controlled and slowly applied. The automobile jack, popular three or four years ago, was simple in technic but for reasons never well explained, it caused considerable postoperative pain; therefore, it has been largely and wisely discontinued. Apparently the most enduring of the simpler reduction methods with or without modification is hyperextension with the patient suspended prone. In the milder lesions, suspension of the shoulders and hips is adequate without deep anesthesia, and this method is rather generally employed in England. While the patient is supported from the pelvis and shoulders hyperextension is secured by gravity and a plaster jacket or the posterior shell is made. The chief objection to this method is that too great a degree of extension is obtained with resultant discomfort and visceral complications while marked atrophy of the erector spinae muscles is invited.

With any degree of unnecessary hyperextension the fully relaxed extensor muscles of the back become extremely atrophic. The erector spinae muscles assisted by a brace must maintain the spine in the slight hyperextension necessary to prevent recollapse of the vertebral body when the patient is first permitted to be upright; therefore, a most important part of the treatment is the preservation of tonicity and strength. Physical therapy unquestionably helps, but fifteen or twenty minutes a day of massage does not preserve the strength in important muscles over-relaxed and unused for several weeks. Prolonged hypextension is unnecessary, anatomically unsound and jeopardizes the ultimate result. As little as ten degrees of extension is adequate as long as it is maintained to prevent any pressure upon the anterior margins of the vertebral bodies. The Rogers hyperextension frame accomplishes reduction with the patient supine and without anesthesia or manipulation, but after a thorough trial which began ten years ago I am convinced that the reduction frame was sired by the rack of the Spanish inquisition. The inquisitors, moreover, did not ask their victims to endure the distress for from six to ten weeks.

Ileus, generally mild, occurs in at least 75 per cent of the cases and may be attributed to direct irritation or damage of the sympathetic nerves. Experience has shown, however, that prolonged hyperextension or a circular plaster jacket increases the distention which at times becomes alarming and seems to predispose to embolism and infarction particularly of the lung. The writer has personally had two deaths from pulmonary embolism, the apparent result of overenthusiastic and prolonged hyperextension in circular casts. The other and more common complications induced by hyperextension are headache, vertigo, insomnia and pain in the recti muscles. Therefore the preferred method is complete anesthesia, quick and full hyperextension followed by very moderate prolonged extension. In the severe lesions combined traction and reasonable hyperextension offer a better and safer chance of reduction than does extreme dorsiflexion. With the patient prone on a thin mattress on the floor, the thighs and pelvis are supported by two assistants so that the back sags sharply with only the extreme upper chest resting on the pad. While in this position the operator using the base of the palms, one on either side of the fracture and lateral to the spine proper, sharply increases the hyperextension by two or three quick downward pushes.

Reduction is not as a rule attempted until the third or fourth day following injury, the interim being occupied by allowing the patient to recover from any shock, attempting to alleviate any visceral complications and in fashioning a posterior plaster shell. Various more complicated supports for holding the patient while making the shell have been tried and subsequently discarded, a simple

canvas hammock readily and cheaply made to use on the Halley or Albee table having proved the most satisfactory. The only medication given is barbiturate and morphine. The canvas hammock is stretched as tightly as possible and the patient placed faced downward. If the patient is obese and there is an over-sag in the canvas a small pillow is placed under the abdomen. Padding and plaster are applied in the routine manner and when sufficiently heavy the shell is removed, trimmed, dried and covered with stockinette. It is then ready for immediate application following the reduction under a general anesthesia as described above.

In summary, attention is called to the necessity of lessening the likelihood of ileus and pulmonary complications by a minimum of prolonged hyperextension. It is furthermore urged that circular jackets be avoided and that the posterior plaster shell be previously made and ready for application before the reduction under deep general anesthesia is attempted. The writer cannot concur with the idea that prolonged and even moderate hyperextension is either essential or advisable. It seems more rational to induce complete muscular relaxation by anesthesia, quickly accomplish reduction and follow this with slight extension over the convalescent period in order to preserve the muscle tonicity so important to the ultimate support of the back.

POSTOPERATIVE CARE

Two or three days of discomfort and restlessness are the rule, and codeine combined with sedatives is freely administered. Morphine is avoided if possible, particularly until after the usual period for the appearance of distention has passed. Prostigmin has proved more efficient than petressin for the relief of distention, although both are frequently used. The restrictions stressed include the constant application of a binder with a shoulder harness to prevent voluntary flexion of the spine. Three times a day the patient is turned on the abdomen for thirty minutes, or longer if so desired, and twice a day the shell is removed at which time the back may be massaged, bathed and powdered. The head of the bed is elevated about four inches during the day and this is not increased for thirty days. A small pillow is permitted. The patient is not allowed to help turn, lie on the side or feed himself. The question of self-feeding is of particular importance where only slight hyperextension is enforced. Also, the patient dare not twist or rotate the spine to reach a bedside table particularly where any lateral compression has complicated the simple anterior wedging.

DURATION OF RECUMBENCY

The duration of the recumbency is modified by the age of the patient, the number of vertebrae involved, the severity of the lesion or lesions present and the success of the reduction. Only the most variable rules can be offered, but generally six weeks for the milder fractures and ten for the very severe will be adequate. Although aseptic necrosis or disintegration of the vertebral bodies has been repeatedly mentioned as a possible late complication it has not been possible to find an authentic case. The one apparently discovered proved to be a Charcot joint. The writer is convinced that even when premature weight bearing is allowed, unless hyperextension has robbed the extensor muscles of all tonicity, a reflex spasm throws the weight back upon the posterior margins of the vertebral bodies and upon the intra-articular processes and so protects the often incompletely healed forward portion. Muscle spasm of the erector spinae mass is also important because of its clinical significance; when present it indicates incomplete healing and proves that hyperextension and mechanical support must be continued.

REHABILITATION

The care during early weeks of weight bearing and ambulation is probably more important than that throughout the period of recumbency. Short pelvic braces of the butterfly or Goldthwaite types have not proved competent for fractures as low even as the fourth or fifth lumbar segments. The higher lesions must also be supported well above the level of fracture. Therefore, the long Taylor brace is always prescribed and carefully fitted with brace bending irons. During the first month the fitting is checked once a week and thereafter every four weeks. The patient is cautioned never to lie down in the brace; it is malleable in order to permit fitting and will therefore loose its lumbar contour if subjected to the body weight. To guarantee the preservation of hyperextension at night and during the mid-day rest period which is enforced, the posterior plaster shell is retained and used. Usually a sagless bed is substituted for the plaster shell at the expiration of six months, but in those cases where the intervertebral disc has been destroyed and attempts at bridging and bony obliteration of the cartilage are shown by late roentgenograms, the shell is used for as long as twelve months. Those lesions in which pain and muscle spasm persist because of incomplete reduction or because a spontaneous attempt at bony fusion has failed, present a distinct problem outside the scope of this paper but the writer advises early operative fusion.

The safe and proper time to remove the supporting Taylor brace requires a nicety of judgment. The roentgenograms are of assistance, but freedom from pain and muscle spasm are more important. Under no circumstances should the brace be removed suddenly. It is best to remove it during the early morning hours when the back muscles are unfatigued and if, after an hour, pain and spasm are not increased, the period is rapidly lengthened. The patient should never carelessly be told to leave the brace off an hour a day, because he will invariably choose the late afternoon or evening. Usually the plaster shell is discarded before the brace, but this is also a matter of judgment depending upon the patient's occupation and whether or not he has returned to work. For instance, the shell can be abandoned before the brace where the occupation demands stooping or lifting, the brace serving as a reminder for the patient to squat rather than stoop.

The constant employment of physical therapy entails a considerable expense throughout the necessarily long convalescent period and, therefore, several evasions and subterfuges have been tried. No real substitute has been found for skilled massage. However, its use may be limited to two short periods, namely, just before the patient is allowed up after the initial period of recumbency, and again for a period of two or three weeks before the removal of the brace. The use of expensive electrical apparatus has not been found to offer any advantage over the convenient electric pad when for psychologic or other reasons electricity seems indicated.

TIME ELEMENTS

For ten years nothing about vertebral compressions has been more uncertain than the time limitations as regards delayed reduction and the healing after reduction. It is common knowledge that the deformities show about the same ease of reduction at fourteen days as in fourteen hours, but attempts at reduction beyond two weeks have been reluctantly tried and infrequently reported. In one personal case, a woman sixty-one years of age, where the anterior surface of the body of the first lumbar segment was crushed to almost a knife edge, about 75 per cent reduction was accomplished on the thirty-third day. This possibly was an unusual and misleading experience, but it has encouraged attempts at reduction in lesions discovered late. The success has been variable, depending more upon the level and the degree of compression and the method used than upon the duration of the injury. In two lesions, one seventeen days old and the other twenty-three days old, no reduction was obtained. Exact statistics are genuinely needed, but meanwhile it seems advisable to attempt reduction up to the end of the third week.

The fact that compression fractures may be reduced two or more weeks after injury has no doubt influenced our views in regard to the necessary period of recumbency if recollapse is to be avoided. As a rule, the higher the fracture, the shorter the period may be, because with the body erect there is less weight on the mid-dorsal than on the low lumbar segments. There are, however, other modifying conditions in addition to the level of fracture such as the lesser mobility of the dorsal spine where the interlocking processes materially assist in weight bearing and are usually undamaged. At any level the integrity of the intra-articular processes influences the duration of recumbency. If fracture of the processes or pedicles has occurred coincidental with a compression of the vertebral body it is obvious that protection of the healing body dare not be attempted by a hyperextension brace which throws the weight upon the processes.

Experience has shown that a most important consideration in determining the necessary period of recumbency is the disintegration of the cartilaginous plate. When the intervertebral disc is seriously ruptured, complete dissolution usually follows, and not until bony fusion or bridging with the opposing vertebra has developed, is healing accomplished and the patient pain-free. These injuries may be pre-determined by the x-ray in the beginning, and a longer recumbency period may be planned and a more guarded prognosis tendered.

CONCLUSIONS

1. Ambulance attendants, traffic police and hospital personnel should be especially trained to handle back injuries. The safest method gambles upon the strength of the common anterior ligament and places the patient face down on a blanket.

2. The majority of vertebral fractures are of the simple compression type that may be well reduced and treated without elaborate apparatus by surgeons not professing exhaustive fracture experience.

3. The more complex fractures requiring particular skill can be differentiated by the x-ray examination, and include those lesions induced by hyperextension and complicated by a dissolution of the pedicles, the laminae, and the intra-articular processes. In this serious group should also be included severely comminuted fractures of the vertebral bodies, all fractures with associated injury to the spinal cord and those disruptions of the

intervertebral discs where the nucleus pulposus is involved.

4. Due to the normal immobility of the thoracic spine, middle and high dorsal fractures are usually multiple, but present only moderate wedging unless the breaking force has been sufficient to fracture the pedicles, the laminae or the intra-articular processes. In such instances severe compression of a single segment is possible. Safe and satisfactory reduction of both the mild and severe lesions has proved difficult or impossible.

5. A disruption of the intervertebral disc and a rupture of the nucleus pulposus frequently cause a delayed wedging of the vertebral body, a fact not well known and therefore a potential source of misunderstanding or litigation. The reduction of such a deformity is impossible since it results from absorption and not a compression of the spongy bone.

6. Experience indicates that it is rational to attempt the reduction of previously undiscovered compression fractures as late as the end of the third week.

7. The favored method of reduction is hyperextension of the spine under an anesthetic that gives complete muscular relaxation while the reduction force is applied manually, lateral to the kyphos. Traction as suggested by Hippocrates is a safe and valuable aid.

8. The immobilization during the period of recumbency is best accomplished by a posterior plaster of paris shell which maintains only a minimum of extension. Prolonged hyperextension predisposes to ileus, embolism and infarction.

9. Finally, statistical information dealing with all phases of this major fracture problem is urgently needed and should cover such features as the incidence, the age, the level of fracture, the comparative merits of reduction methods, the degree of ultimate disability, and the experience with delayed reduction. Those lesions which by reason of the level or the severity are irreducible should also be recorded.

PATELLAPLASTY

PARTIAL EXCISION OF THE PATELLA

LEO J. MILTNER, M.D., Davenport

The object of this paper is to call attention to the fact that the knee joint may function in a very satisfactory manner following partial or even complete removal of the patella; also, to describe the author's technic for patellaplasty, a type of arthroplasty. The chief indications for reconstructive surgery of this bone are found in old comminuted fractures and arthritis. In these pathologic conditions, the patella is often the chief disturbing factor in the knee joint because of its overgrown and roughened articular surfaces, conditions which slowly cause serious local arthritis in the patellar region, which in turn eventually spreads to other parts of the joint if allowed to remain uncorrected. If the pathologic changes are confined to the patellar region, the indications for operative repair are usually obvious.

The indications for operative repair of the patella may be equally good in an occasional case of chronic arthritis. However, in chronic arthritis of the knee, the operative treatment is more inclusive and is aimed toward correction of the several pathologic changes present. In chronic arthritis of the knee joint, all the joint structures may be involved. The hypertrophic spurs at the chondro-osseous margins of the femur, tibia, and patella produce pain by mechanical irritation. Pain also is produced by pinching of the hypertrophied synovia between the articular surfaces during motion of the joint. Therefore, in chronic arthritis, the operative procedure includes, first, excision of the thickened and chronically inflamed portions of the synovial membrane, along with removal of the infrapatellar fat pad if necessary; second, removal of the hypertrophic spurs; and third, removal of a part or all of the patella. The synovectomy portion of the operation is an accepted and standardized orthopedic procedure. Likewise, the part including the removal of the "osteophytic spurs" is an old procedure which has regained favor during recent years. In my experience, the third part of the operation, that is, reconstruction of the hypertrophied patella is equally as important as the two preceding parts, especially in those cases which show the majority of the joint irritation and pain in the anterior or patellar portion of the joint.

Even though Tippett* has shown that the patella may be excised completely without serious interference with the function of the knee, the author prefers to leave intact enough bone to maintain firm contact between the quadriceps tendon and the patellar ligament. With a portion of bone retaining strong direct contact, earlier postoperative physiotherapeutic treatment may be instituted. It is true, as Tippett points out, that a few fibers of the quadriceps tendon extend downward anterior to the patella and that they connect it with the patellar ligament. However, these fibers are sometimes so sparse and thin that they form an inadequate bridge after complete excision of the patella. For this reason, I have developed and used the following technic for patellaplasty on five cases

*Tippett, G. O.: Treatment of fractures of the patella by excision. Brit. Med. Jour., i:383-384 (February 19) 1938.

with very satisfactory results. In two cases, the operative repairs were confined to the patella, since they were performed for old comminuted fractures of this bone. In the remaining three cases performed for arthritis, it was necessary to add partial synovectomy and exostectomy to complete the operations.

TECHNIC

There are numerous articles in the literature on the technic of synovectomy and exostectomy as used in chronic arthritis for hypertrophic spurs. This description of technic, therefore, will be confined chiefly to the plastic repair of the patella, a type of arthroplasty which I have designated patellaplasty.

A tourniquet is applied around the mid-thigh. The knee joint is opened through a curved longitudinal incision medial to the patella. Synovectomy, either partial or extensive, may be performed according to the indications present. Likewise, the hypertrophic spurs at the chondro-osseous margins may be removed with a chisel. If the articular surface of the patella is roughened, or if it shows a growth of new bone at the chondro-synovial margins, the following type of patellaplasty is performed.

The articular surface of the patella is rotated outward one hundred and eighty degrees to allow complete exposure under direct vision. Parts of the patella are then cut away until only a strip of the external cortex remains between the mid-portion of the quadriceps tendon and the patellar ligament. Thus, the patella is reduced in width to about one-half of an inch and in thickness to about three-sixteenths of an inch. Care is taken to preserve the soft tissues, since these tissues are later sewed together to form a cover for the remaining denuded portion of the patella. If the soft tissues of the capsule lateral to the narrow remaining portion of the patella are adequate, they may be sewed together. On the other hand, if the tissues cannot be drawn together readily, the denuded surface of bone may be covered by reflecting a portion of synovial membrane along with a thin layer of the quadriceps tendon from above, or by reflecting the synovial membrane and infrapatellar fat pad from below. The constrictor is released. Large bleeders are tied with catgut or silk suture, and the smaller ones are controlled by means of electrocoagulation. If all bleeding vessels are controlled before the knee joint is closed, the amount of postoperative reaction is minimized to a great extent, and the rapidity of recovery is enhanced. The wound is closed in the usual manner following which a posterior splint is applied to the extremity.

The author prefers a posterior splint which may be removed to allow early motion. As early as the third day, the knee may be flexed slowly from fifteen to twenty degrees, and the amount of flexion increased day after day. Healing of the wound usually takes place between the seventh and tenth days. Quadriceps exercises and active and passive motion should then be instituted. If the knee shows a resistant extension contracture, one should wait until about the fourteenth day after operation, and then manipulate the knee, with the patient anesthetized by intravenous pentothal or gas. During the manipulation, the knee may be flexed ninety degrees or more to break the intra-articular adhesions. Subsequent physiotherapeutic treatments of a correct nature are of the greatest importance and should be continued for several months in order to insure the maximum amount of function.

NERVE DEAFNESS*

James A. Downing, M.D., Des Moines.

This study of nerve deafness was prompted by a curiosity to know the anatomic reason for high tone loss with shortened bone conduction in many patients, particularly those past middle age, without visible ear pathology. The discussion will be limited to the type of patient who is seen with fairly normal low tone field, absolute shortening of bone conduction time and absolute high tone loss, usually with an indefinite history of onset and gradual loss. Time does not permit the discussion of otosclerosis, Paget's disease, meningitis, or brain tumors. If some rather blunt statements are made, they will be verified by references to the literature. As a result of research, marked advances have been made in the last few years in our knowledge of the physiology of hearing and the pathology of hearing defects, the most notable being the Wever-Bray technic for detection of sound perception in experimental animals.[1] Whether or not we agree with the experimenters, the results have been most educational.

From a biologic standpoint hearing, being the last developed special sense, is the most susceptible to affectations. The labyrinthine function is basically much older, and hence, more resistant. Anatomically, the formation of the cochlea is unique, a two and one-half turn snail shell, dense-walled, with two communications with the middle ear cavity; the first through the oval window with its stapedial foot-plate, into the scala vestibuli; the second through the round window, closed by the secondary drum membrane, into the scala tympani, which occupies most of the room in the basal coil.

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The two scala are separated in the basal coil, but communicate through the helicotrema at the apex. In between these scala, completely sealed in, is the scala media housing the nerve ends, the organ of Corti, its average length when uncoiled being about 31 millimeters.[2]

The auditory division of the eighth nerve enters in the center of the cochlea, sprays outward in a circular spiral manner, and after leaving the spinal ganglia, ends in the inner and outer hair cells of the organ of Corti. These are enervated by different sets of fibers. Those supplying the outer hair cells, spread and interlace over a considerable area; the fibers to the inner hair cells are discrete regional branches without anastomosis.[3] The function of each set of hair cells is not known, but it has been shown that the internal hair cells are more resistant to affection than the outer, that a loss of thirty to forty decibels occurs when the outer hair cells are degenerated, and that a loss of sixty to ninety decibels occurs when both the inner and outer hair cells are degenerated. No loss of inner hair cells has been noted without prior loss of outer cells.[4] A localized lesion involving the hair cells of the organ of Corti shows the greatest hearing loss at the point of injury, but the defect tends to radiate fanlike in either direction over a considerable area.[5] Following lesions of the organ of Corti, an ascending degeneration of the spiral ganglion and nerve fibers occurs.[16]

The arterial supply of both the cochlea and labyrinth is derived from the labyrinthine artery, a branch of the basilar artery; all of the cochlea is supplied by the anterior vestibular branch, except the proximal two-thirds of the basal coil which receives its nutrition from the cochleovestibular branch.[6]

The main arterial supply passes up the modiolus, the center of the snail shell, and divides into arterioles to radiate out along the lamina spiralis to supply the organ of Corti.[7] These arterioles have multiple anastomosing loops, before breaking into thirty or thirty-five terminal branches, about fifteen of which go to the basal coil. The usual arrangement is for the vessel which sends out twigs to supply the scala vestibuli of a coil to send out another set which supplies the lamina spiralis of the coil next above.[8] The under surface of the basal coil is usually quite free from arterial vessels.[7] Each of these divisions is a terminal end artery, closure of which would cause dysfunction of a minute portion of the organ of Corti. There is no anastomosis with the perilabyrinthine circulation.[10] The capillaries, as they break up, especially into the striae vascularis, are very primitive; since they are only one cell thick, they are vulnerable to accident.[11] The striae vascularis, which apparently is the secreting structure for the endolymph, is much more friable and susceptible to vascular accident in the basal coil.[12] The venous return flow passes along the region of the aqueductus cochlearis. From an anatomic standpoint, it would seem logical to suppose that the basal coil would be more liable to vascular accident or disease than the remainder of the cochlea.

In spite of the fact that we do not know how we hear, there are a few factors that seem proved. Sound must enter the middle ear and be transmitted to the tone localizing area in the organ of Corti. We know from clinical experience that impairment of the conduction mechanism shows a loss of perception for the lower tones which apparently are carried by the ossicular chain through the oval window, agitating the scala vestibuli. However, the action of the muscles of the ossicular chain, which seems to act as a protective mechanism in excessive sustained noise, seems to have no influence on tones over 2,000 cycles.[13] Apparently the higher pitches are not dependent on the ossicular chain for transmission and go directly through the round window stimulating the scala tympani.[14] This probably accounts for the marked loss around 4,096 cycles in defects due to excessive noise[15] and for the comparative good reception of high tones in uncomplicated middle ear defects. In the depressed tonal area from excessive noise, usually around 4,096 cycles, the involved portion tends to radiate in either direction, but more particularly toward the higher tones, if the ear is subject to continued trauma, such as is found in machinists, gunners, boiler workers, riveters, etc.[15] Apparently exposure to intermittent loud noises is more injurious than exposure to a sustained noise, and the damage is greater if the vibration is body-borne as well as air-borne; for example, aviators' deafness.[17] We see relatively few patients with absolute loss of low tone, but many with absolute loss of high pitch. In the true conduction deafness, the perception of low tones is reduced or absent by air; but present through bone conduction, which will show relative or absolute increase. In cochlear degeneration, the bone conduction is shortened with absolute loss of high pitch; the high tones are gone and cannot be perceived either through air or bone.

We know that the human ear distinguishes pitch, volume, quality, timber, etc. The same vibrating note of the same cycle produced by a violin, piano, or cornet can be recognized as such from the quality of the overtones and harmonics. There must be much intercommunication between

the nerve fibers to permit such distinction.[18] As previously shown, a marked loss in one area leads to degeneration of anastomosing fibers, and while excessive stimulation may cause the tone to be heard, there is real nerve tissue loss spreading over considerable tone range with consequent reduction in bone conduction. Accidents involving multiple areas, therefore, should cause spreading degeneration of the ganglion cells and nerve tissue and the more nerve tissue loss the greater the loss in bone conduction, as well as absolute loss for some tones. Tone localization in the cochlea seems to be rather definitely proved[19 and 20] with the high tones in the basal whorl and the low tone perception in the apex. It would seem from the localization of the low tones in the apex, furthest from the source of stimulation and the protective mechanism of the ear from low tones, that nature did not intend the ear to be subjected to the trauma of our artificial modern life. There are very few auditory insults in nature except thunder, earthquakes, and landslides, and these are of low pitch. Excessive high pitch sounds in nature are rare.

Two full turns of the cochlea are necessary for human voice perception and of these the lower frequencies carry the speech energy, but little of the articulation. Elimination of frequencies below 1,500 cycles results in loss of 87 per cent of speech energy, but reduces perception of articulation only 32 per cent. Elimination of frequencies above 1,500 cycles results in loss of 10 per cent of speech energy, but reduces articulation perception 35 per cent. The frictional consonants, s, z and th, are definitely affected when frequencies above 5,000 cycles are eliminated, showing a loss of articulation perception of 82 per cent when frequencies above 2,500 cycles are eliminated. Speech reception to be efficient requires perception from 100 to 5,000 cycles, two full cochlear turns. Energy or volume is carried by cycles less than 1,000 and interpretation from 1,000 to 5,000. For the measure of intensity of sound we are indebted to the Bell Telephone Laboratories. Their unit of measure is the bel, or transmission unit, and is so calibrated that the minimal audibility of the human ear at 700 cycles is obtained by a force of .001 of a dyne per square centimeter of drum membrane. One-tenth of a bel is called a decibel, which is the least amount of variation in sound volume a normal ear can detect. The loudness perception of the humar ear is by pure logarithmic progression. For example, if one whistle makes ten decibels of sound at a given cycle, it would take ten whistles going simultaneously to double the sound or make twenty decibels and 100 whistles would be required to make thirty decibels.

The human ear is not cut to pattern; congenital variations in high and low pitch perception vary greatly in individuals with apparently healthy ears. This is more apparent in the basal turn, high note perception, than in the apex. The perception of sound in the middle ranges runs fairly average, however, the minimum threshold being most acute at about 800 cycles. Placing the tone of 8,192 cycles in the middle of the basal turn and knowing that perception as high as 60,000 to 70,000 cycles is within normal average, there must be a great deal of overcrowding in the lower half of the basal turn, with certainly some resulting vulnerability. Low tones seem more stable. Lurie[4] has shown that in some of his congenital deaf waltzing guinea pigs, the organ of Corti was completely absent in the basal whorls, but almost normal near the helicotrema.

From the standpoint of physics there can be no senile loss of bone conduction. All other factors being equal the older ear should have better bone conduction than that of a child, because of the increased bone density. Any reduction in bone conduction as a result of age must be explained on some other basis, degeneration of ganglion cells or organ of Corti, especially in the basal coil. Pure senile deafness occurs as a result of senile atrophy of the cochlear ganglion cells and arteriosclerotic changes frequently associated with arteriosclerotic contracted kidney[21] and atrophy of ganglion cells, especially in the basal coil.[22]

Administration of quinine, salicylates, and mapharsen to a pregnant mother caused severe changes in the cochleae of the fetus, most marked in the basal coil.[11] Peripheral changes occur, especially in the basal coil, with degeneration of myelin sheaths of the nerve following administration of quinine, salicylates and toxins,[23] and in Vitamin B deficiency, associated with alcoholic ingestion.[24] Various other drugs and chemicals act in diverse ways;[25] quinine has special affinity for hair cells in the basal whorl; salicylates seem to act more on the spiral ganglion, probably causing ascending degeneration. Alcohol acts on the nuclei of the hair cells, especially in the basal turn;[26] tobacco stimulates the sympathetic nerves, with anemia and degeneration more marked in the basal turn. Apparently the deafness following febrile attacks such as scarlet fever, typhoid and measles, not complicated by suppurative otitis media, is due to a toxic neuritis.[27] Lead and arsenic seem to have a similar action.[26] Syphilis does not play as much a part in nerve deafness as we have been led to believe. The incidence of deafness in syphilitic patients is no greater than in non-syphilitic individuals, except in those showing neurologic mani-

festations.[28] Since the striae vascularis is more vulnerable in the basal coil,[12] it is not surprising that marked vascular changes in this structure have been demonstrated from the administration of quinine, salicylates, codeine, and barbital.[29]

Cardiovascular disease probably accounts for much of the hearing loss in advanced age. Here a fundus examination is of much value. Other causes are hypertension with minute areas of hemorrhage into the organ of Corti; arteriosclerosis, involving the striae vascularis as well as the terminal arterioles in the organ of Corti; vessel contractions from sympathetic nerve disturbance allied to Berger's and Reynaud's diseases;[30] poor nutrition, such as the primary anemias, or a severe secondary anemia; vessel permeability, as in the purpuras; diabetes where the involvement may be from vascular accidents or a toxic neuritis.[31] Endocrine disturbances also play a marked part in high tone loss, notably, thyroid and theelin disorders. Allergy and defective salt metabolism are also noted as causative factors. The osmotic damage to the cochlea from the introduction of toxic material into the middle ear[32 and 33] at once raises the probability of cochlear damage from suppurative otitis media and probably explains the confused hearing test in the so-called mixed deafness. The secretory otitis media, with tubal closure, especially in childhood, shows marked high tone loss as well as low tone impairment.[34] This must be explained on the osmotic absorption, not from impaired conduction. Where the process becomes suppurative, the damage is not as great, probably because of the difference in density of the intratympanic exudates.

CONCLUSIONS

1. The cochlear portion of the eighth nerve is the most vulnerable of the special senses.

2. The basal coil is particularly vulnerable from overcrowding, variation in blood supply, and thinness of the striae vascularis, especially the capillary layers.

3. Loss of external hair cells causes marked defect in the damaged area; if both internal and exterior hair cells are lost in a given area, a tone gap appears. A fan-shaped hearing loss occurs from the loss of interlacing external hair cell nerve fibers.

4. Ascending atrophy progresses from the organ of Corti to the spiral ganglia and nerve fibers.

5. The greater area or number of areas involved and the more involvement of hair cells, the greater the resulting atrophy in the spiral ganglion cells and nerve fibers with resulting poorer hearing and consequent loss in bone conduction.

6. Quinine should not be given an expectant mother; congenital deafness may result.

7. Toxic drugs, quinine, salicylates, arsenic, etc., should be given cautiously, and one should watch for aural signs.

8. Any debilitating disease, whether circulatory, anemic, infectious, toxic, or endocrine, may result in cochlear damage.

9. Bone conduction is the real test of cochlear function.

10. Shortened bone conduction is a manifestation of cochlear degeneration regardless of age.

A careful history, often poor at best, as well as tuning forks and audiometer tests are necessary for diagnosis. It is not sufficient to make a diagnosis of nerve deafness and dismiss the patient with a poor prognosis. Neither is it justifiable to submit a patient with nerve deafness to the mechanical therapy for conduction deafness. Each patient with a cochlear defect or nerve deafness is entitled to a careful physical examination as well as an ear examination. If some general disease has caused a recent loss of hearing, therapy directed to the general condition may secure some improvement in hearing, or if the process is of long standing, there is a possibility of arresting further loss. The hearing loss may be the first detected sign of some systemic disease which, if not recognized, may lead to more serious complications than the hearing defect.

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Discussion

Dr. Royal F. French, Marshalltown: Dr. Downing has reviewed the anatomy of the cochlea and again called our attention to the fact that nature has not only placed this end organ of hearing in such a well protected area, but has immediately surrounded it with a dense bony capsule. The density of this bone also aids in sound conduction. He has stated that the blood supply of the proximal two-thirds of the basal coil of the cochlea is from the cochleovestibular branch of the basal artery, and that the balance of the cochlea is supplied by the anterior vestibular branch. The question is whether a pathologic condition can be present in one of these small arteries and not in the other. If this does happen, we have an explanation of the different tone losses in nerve deafness. This seems reasonable, for we know there is and can be a difference in the tone loss between the basilar and apical portions.

Dr. J. D. Robertson of London, in writing on fluid equilibrium of the body and eye, has shown that when the colloid osmotic pressure of the plasma falls, we have water logging and when the osmotic pressure of the blood is suddenly raised we have dehydration; so there may be a difference in the interchange of fluids in the two portions of the cochlea. This would account for some difference in the high and low tone loss of hearing.

Nerve deafness from an anatomic standpoint may be due to a dysfunction of the external hair cells, the internal hair cells of the scala media or of the fibres of the nerve itself, as in a toxic condition or nerve atrophy. The prognosis will depend on the location and cause of the deafness. It is surely a mistake to dismiss these patients with the diagnosis of "nerve deafness" and a prognosis of "no help."

We have been through the period of the effect of toxins absorbed from the flora of the intestinal tract as a basis of many of the otherwise unexplained physical troubles, and we are now in the throes of the vicarious vitamin vagaries and the endless endocrine endeavors to end all our woes. Now comes the intracellular osmotic exchanges as the culminatory factor to relieve the rest of our troubles. From each of these new advances, some benefit has accrued. These methods and tomorrow's advances will work together to mitigate the situation for the patient who is losing his hearing. While we are waiting for further knowledge and aids, it still behooves us to give our patient the advantage of the newer findings, coupled with the tried and true knowledge of the present science of otology.

Dr. Sidney G. Hands, Davenport: I have nothing to add and wish simply to emphasize a point or two brought out in the essay; namely, the part played by drugs in the production of nerve deafness. The modus operandi has been explained fully. In pregnancy, a hypersusceptibility to the action of certain drugs may be passed on to the fetus. When quinine or the salicylates are used on the mother, the characteristic congestion of the delicate hair cells of the organ of Corti is sufficient to cause a pressure necrosis, which later develops into a degeneration of more or less of the nerve filaments of the eighth nerve. This is another reason why quinine should not be used as an obstetric adjuvant. The almost universal exploitation of the public by pharmaceutical houses who sell so-called "cold cures" which contain quinine and the salicylates, among other drugs, should be the concern of otologists because of the possibilities for evil as previously explained.

McKenzie claims that focal infections are the most frequent causes of unilateral nerve deafness, while bilateral nerve deafness is the most frequent result of postacute and chronic infectious fevers. We used to find bilateral deafness following typhoid fever, but since that scourge has been practically eliminated, this type of deafness is rarely encountered.

In my opinion, this Society is to be congratulated in having as a member, one who is willing to undergo the physical and mental strain incident to the preparation of such an excellent dissertation as that presented by Dr. Downing. I am willing to admit that fifty references which I consulted failed to produce anything like the amount of valuable information given in his paper.

CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

THYROGLOSSAL DUCT LESIONS*

R. N. BARTELS, M.D.
Iowa City

Lesions of the thyroglossal tract are rare. Fifty-three patients with developmental abnormalities of the tract were admitted to the University Hospitals between January 1, 1915, and January 1, 1938, representing 0.021 per cent of the admissions during this period. Forty-nine of these patients received surgical treatment, forty-one have been followed and these results will be presented.

EMBRYOLOGY AND ETIOLOGY

Thyroglossal duct cysts and sinuses occur as a result of faulty development of the thyroglossal tract. Normally this tract becomes completely obliterated before birth.[1, 2, 3, 7, and 8] The thyroid gland arises as an outpocketing in the floor of the pharynx; the position of primary outgrowth is marked by the foramen caecum at the base of the tongue in adult life. This epithelial evagination is transformed into a stalked vesicle or diverticulum which grows downward and backward from its point of origin as a tubular duct (thyroglossal duct), and bifurcates at its distal portion to form the thyroid lobes. The thyroid body and duct proper, during the latter's transitory existence, descend in the midline through or adjacent to tissue which later becomes the hyoid bone. The hyoid bone develops at the time of or after the descent of the gland; thus the thyroglossal tract may vary in its relation to the hyoid. Usually the tract lies posterior, but may be anterior or pass through the substance of the bone. Normally atrophy of the duct begins in the fifth week and ends in the eighth week of intra-uterine life. If the duct is not obliterated various anomalies occur which depend upon the location and extent of the vestiges. The rarest anomaly associated with the thyroglossal tract is the failure of the thyroid gland to descend into the neck. A simple cyst or sinus is the most common abnormality, since a retention cyst may occur in a closed portion of the tract. By recurring inflammation such a cyst may increase markedly in size in a short time. Sistrunk[3] and Rankin and Crisp[7] believe that in individuals with a thyroglossal duct opening at the foramen caecum, the cyst may form as a result of closure of the duct by infection at the foramen. The secretion thus accumulating in the duct travels downward forming a cyst which presents itself in or near the midline. Thyroglossal sinuses result from spontaneous rupture or surgical drainage of the cyst.

*From the Department of Surgery.

PATHOLOGY

The contents of a cyst generally are of a mucoid character. If there has been long standing infection in the cyst the contents may be creamy or cheese-like in consistency and contain cholesterin crystals.[1] They are purulent if an acute infection is present. There were three such cases in our series treated only by drainage. Organisms, Streptococcus viridans and Streptococcus haemolyticus, were found in two patients, while the culture of the third was negative. Long standing infection leads to thickening of the cyst wall with adhesions to the surrounding tissues. Microscopically the cysts are lined by stratified squamous epithelium, although occasionally the epithelium may be ciliated and columnar. There is usually evidence of chronic inflammatory change in the cyst wall and occasionally only a fibrous wall denuded of epithelium may be demonstrated. This is especially true of the sinus tracts. In one of our cases normal thyroid tissue was found in the connective tissue surrounding the cyst wall. Clute and Cattell[1] reported one case where thyroid tissue was found in the cyst wall.

INCIDENCE

Of the fifty-three patients with lesions of the thyroglossal tract observed at the University Hospitals, thirty were males and twenty-three were females. Rankin and Crisp[7] in a series of two hundred patients at the Mayo Clinic observed a sex ratio of a little less than two to one with males predominating. Baumgartner[2] reports eleven cases, six in males and five in females. In a series of sixty cases studied by Clute and Cattell[1] thirty-eight were females and twenty-two were males, a ratio of less than two to one.

In our series the age at the time of admission to the hospital varied from two weeks to seventy-one years, the average being nineteen years. The age at the time symptoms were noted varied from birth to sixty-seven years, the average being twelve years. In two patients the age of onset was not known. The number of patients in the various age groups at the time of onset of symptoms is given in Table 1.

It is seen from Table 1 that symptoms of thyroglossal tract remnants make their appearance more frequently in the first two decades of life. In six patients symptoms were noted at birth or within the following two weeks, in one patient symptoms had been present for sixty-one years, but the average duration was seven years. There is practically

TABLE 1—AGE AT ONSET OF SYMPTOMS

Age	Number
Birth- 1 year	10
2-10	22
11-20	10
21-30	4
31-40	1
41-50	2
51-60	1
61-70	1

no familial tendency in the development of thyroglossal duct lesions. Only two patients reported such lesions in their relatives.

SYMPTOMS

The presence or absence of infection is a most important factor influencing the symptoms of thyroglossal lesions. Characteristically a painless, cystic swelling develops in the median line of the upper neck. Unsightliness usually is the only complaint. This is in accord with the findings of Clute and Cattell,[1] McClintock,[6] Baumgartner[2] and Rankin and Crisp.[7] When an infection occurs there is a more rapid increase in the size of the cyst; pain, tenderness and redness of the overlying skin may be present. A general reaction may occur depending upon the severity of the infection. The cyst is then usually incised, although spontaneous external rupture frequently occurs. Following evacuation the neck returns to normal except for a small dimple or draining sinus. The mucopurulent discharge from the sinus is intermittent. Dysphagia, obstructive dyspnea and dysphonia are infrequently occurring symptoms. Unless infection is present the cyst often remains constant in size over a period of years. Occasionally it may decrease in size and disappear, only to reappear at a later date. The symptoms given by the fifty-three patients observed are enumerated in Table 2.

PREVIOUS TREATMENT

As noted in Table 2 thirty-eight or 71.7 per cent

TABLE 2—SYMPTOMS

Symptoms	Number
Mass	53
Discharge	
Externally	38
Internally	0
Tenderness	18
Pain	16
Discoloration	11
Dysphagia	7
Obstructive dyspnea	3
Dysphonia	1
Cough	1
Chills and fever	1
Soreness at base of tongue	1

of the patients had had a discharging sinus on the neck. This fact becomes more significant when one analyzes the treatment received by these patients prior to their entrance to the hospital. A summary of this treatment is given in Table 3.

TABLE 3—PREVIOUS TREATMENT

Treatment	Number of Patients
Operative	
Excision only	6
Incision only	19
Both	3
Opened by patient	1
	29
Non-operative	
Sinus injected with "acid"	1
No treatment	23

In those patients receiving operative treatment, incision, excision, or both were done at least once. In one patient a cyst was incised three times and painted once with phenol in an attempt to close it. In one patient attempted excision of the cyst resulted in a recurrence without a draining sinus. This is the only instance in which a draining sinus did not appear following an operative procedure. Twenty-four patients had no operative treatment before admission. In ten of these the cyst had ruptured spontaneously. Only fourteen patients or 26.4 per cent were admitted with a simple cyst.

PHYSICAL FINDINGS AND DIAGNOSIS

Thyroglossal cysts are most commonly located in the median line of the neck just below the hyoid bone. They may lie at different levels in the neck, from above the hyoid bone to the suprasternal notch. The location of a sinus is dependent on the original position of the cyst and on the point at which it was incised or ruptured spontaneously. As they increase in size they may be somewhat asymmetrical in position. The cyst moves upward on deglutition. Usually a cord-like structure may be felt passing upward toward the hyoid bone. The cysts are smooth and fixed to the deeper structures. The physical findings are classified into five groups (Table 4). Group A includes the simple cysts without previous operative attack or spontaneous rupture. Group B includes those with previous rupture or operative procedure and with a recurrent mass. Three patients with a scar only are placed in Group C. Group D includes patients with both mass and sinus. The last group includes those with only a sinus.

It is seen that in all groups except the last the majority of lesions were in the midline. In three patients in Group A, the presence of redness, pain,

TABLE 4—PHYSICAL FINDINGS

Group		Number
Group A.	Cysts	14
	11 or 78.5% in midline	
Group B.	Mass	3
	2 or 66.6% in midline	
Group C.	Scar without sinus	3
	2 or 66.6% in midline	
Group D.	Mass and sinus	11
	7 or 63.6% in midline	
Group E.	Sinus only	21
	10 or 47.6% in midline	

and tenderness justified a diagnosis of acute infection of the cyst. The cysts varied in size from those less than one centimeter in diameter to one extending from the chin to the base of the neck.

Injection of the sinus tract with a radiopaque substance followed by roentgenography of the neck is painful to the patient and of little aid in diagnosis. Injection was attempted in four patients. In none of these was the visualization satisfactory. Injection of the sinus with a dye, such as methylene blue, is sometimes valuable as an aid in demonstrating a communication with the mouth or to outline the tract for surgical removal. Twenty-two patients received methylene blue injections prior to operation and eight were found to have a communication with the mouth. Sistrunk[3] warns against the use of excessive pressure when injecting methylene blue in the sinus tract because the dye may be forced into the surrounding tissues.

The diagnosis is usually not difficult. Clute and Cattell[1] believe relatively few lesions are confused with a thyroglossal cyst. A discrete tuberculous gland in the midline is very rare but may be confusing at times. Nonspecific adenitis is generally to the side of the midline and usually is bilateral. Pyramidal lobes of the thyroid, adenomata or aberrant thyroid tissue are frequently very difficult to differentiate; they are usually more firm than a thyroglossal cyst. Dermoid and sebaceous cysts must be considered in the differential diagnosis. The former are usually attached to the deep fascia and the latter to the skin. Lipomata frequently have a doughy consistency and, like dermoid and sebaceous cysts, do not move upward on deglutition.

TREATMENT

Radical extirpation of the cyst or sinus is the only method of treatment which offers a chance of cure. The treatment of cysts and sinuses, especially the latter, by the injection of sclerosing agents, although long tried, has practically been abandoned.[8] Sistrunk's[3] operation has been used exclusively by Clute and Cattell[1] and Rankin and Crisp[7] with excellent results. This consists of complete removal of the cyst or sinus to the hyoid bone, a resection of the median portion of the hyoid and excision of a core of muscular tissue in the plane of the thyroglossal tract to the foramen caecum. Clute and Cattell state that in six of nine patients where a less radical procedure was employed additional operation became necessary. McClintock[6] believes the radical method of Sistrunk may well be reserved for those cases in which a pathologic process above the hyoid bone is demonstrated. His method consists of excision of the tract to the hyoid bone with cautery of the base. In a small series of nine patients he reported no recurrences with this method. In the presence of acute infection in a cyst, incision and drainage should be performed and the patient advised of the necessity of subsequent operation for excision.

The treatment of the individual patients in this series depended upon the findings at operation. In some cases only simple excision of the cyst was performed, in others the sinus was excised as high as possible. In a few patients a modified Sistrunk procedure was done. Acutely infected cysts were incised and drained only in three cases. Recurrences necessitated reoperation in eight of the forty-nine patients. Six were operated upon twice, one three times and one four times. A summary of the treatment is given in Table 5.

TABLE 5—SUMMARY OF TREATMENT

Total	Patients
Not treated	4
Treated	49
Treated by incision	3
Treated by excision	46
One time	38
Two times	6
Three times	1
Four times	1
Per cent of patients with reoperation	17.4%

Recurrences were noted in 18.4 per cent of the forty-one patients. The results in eight patients for one year or more are not known.

SUMMARY

Thyroglossal duct cysts and sinuses are rare. Diagnosis is based upon the history and findings of a midline tumor sinus moving upward on deglutition in the region of the hyoid bone. Complete excision of the cyst and sinus tract is necessary to effect a cure. The incidence of recurrence in this series was 18.4 per cent.

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FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

INCIDENCE OF TUBERCULOUS LESIONS IN 630 NECROPSIES

F. P. McNamara, M.D., Dubuque

The rapid and consistent decline in the death rates from tuberculosis since the beginning of the century is amazing evidence of the effectiveness of the campaign against the disease. According to the statistics of the Metropolitan Life Insurance Company* in 1900 there were 195 deaths from tuberculosis per 100,000 of total population living in the Original Death Registration States. In 1938 the death rate was 43 per 100,000 and it was estimated that in 1940 there would be only 37 per 100,000. The estimate for the entire country was 40 per 100,000. This means that about 200,000 persons will be alive on December 31, 1939, who, during the current year, would have succumbed to tuberculosis if the rate of 1900 still prevailed. Aside from the lives which have been prolonged, the gains to the country, both social and economic, have been enormous. Innumerable homes have been saved from poverty and disruption. Many thousands, at the most productive age of life, who otherwise would have been sufferers from the white plague, are now at work in daily tasks essential to the welfare of the community.

However, the advances made in the campaign against tuberculosis should not make us too complacent as regards the complete eradication of the disease. While this desirable end is undoubtedly possible, its attainment demands that there be no relaxation in our efforts to accomplish it. Many factors are concerned in the further eradication of the disease; education of the public; more beds for those affected, wherever needed; better living standards for the masses of people; the early diagnosis of cases of the disease; the institution of proper treatment; the intensive search for all possible contacts; and again, proper treatment for those discovered to be infected. The latter phases of the anti-tuberculosis campaign must necessarily rest upon the shoulders of the medical profession. Paradoxically, as the morbidity of the disease has been reduced, the work of the doctors has been increased. Because he sees fewer cases he must search with greater intensity than ever for infected patients. Therefore, today instead of the usual case reports it seems more worthwhile to present a statistical analysis of cases with tuberculous lesions in our series of 630 necropsies. This will indicate the incidence of both the primary and reinfection types of tuberculosis in a community of about 50,000 population. In judging these figures, it should be known that recognized active cases of tuberculosis are cared for at Sunnycrest, the Dubuque County Sanatorium. In other words, the statistics are almost exclusively concerned with patients from the general population whose tuberculosis was only recognized in the hospital or at necropsy.

The table which follows is based upon 630 necropsies in which 124 patients (19.6 per cent) had tuberculous lesions. It is divided somewhat arbitrarily depending upon whether the lesions were the primary cause of death, were active, quiescent or "healed" lesions. We have done this with a full realization of the dictum that "once a patient is tuberculous, he is always tuberculous."

CASES IN WHICH TUBERCULOSIS WAS THE PRIMARY CAUSE OF DEATH

Chronic ulcerative pulmonary tuberculosis with meningitis	4	
Chronic ulcerative pulmonary tuberculosis	4	
Chronic ulcerative pulmonary tuberculosis with disseminated organ tuberculosis and diabetes	1	
Tuberculous salpingitis and peritonitis	3	
Tuberculous epididymo-orchitis and prostatitis with meningitis	1	
Miliary tuberculosis with meningitis	1	
Renal and suprarenal tuberculosis with peritonitis	1	
		15

TUBERCULOSIS LESIONS IN PATIENTS DYING FROM OTHER CAUSES

A. Active Lesions		
Chronic ulcerative pulmonary tuberculosis	11	
Apical pulmonary tuberculosis	9	
Primary pulmonary complex	2	
Intestinal tuberculosis with mesenteric, tuberculous lymphadenitis	4	
Renal tuberculosis	1	
		27
B. Quiescent Lesions		
Calcified primary pulmonary complex	22	
Calcified primary pulmonary complex with fibrous pleurisy	10	
Calcified primary pulmonary complex with apical scars	7	
Calcified primary pulmonary complex with apical scars and fibrous pleurisy	9	
Apical pulmonary scars	9	
Apical pulmonary scars with fibrous pleurisy	16	
Calcified hilic lymph nodes	3	
Calcified mesenteric nodes	3	
Tuberculosis of the spine	3	
		82
Total number of cases		124

An analysis of the table shows that 124 (19.6 per cent) of the 630 necropsies, which include stillborn and premature infants as well as all

*Deaths from tuberculosis. Statistical Bulletin, Metropolitan Life Insurance Co., xix:1-4 (October) 1938.

ages, had tuberculous lesions. Forty-two (6.66 per cent) had active lesions; 82 (13 per cent) had quiescent or healed lesions. Probably these figures are approximately true for the entire population of this community. If correct, this would indicate that about one-fifth of the population is infected with tubercle bacilli; that one-third of those infected have active tuberculosis and that two-thirds of the lesions are in the process of healing. They also indicate that about 35 per cent of those with active tuberculosis will die of the disease. These figures, obviously only approximately correct, nevertheless emphasize that tuberculosis is still a most important clinical and public health problem.

An analysis of the clinical records of the 124 cases shows that 32 (25.8 per cent) were diagnosed. They were divided as follows: nine (60 per cent) of the fifteen patients who died of tuberculosis; seven (25 per cent) of those with active lesions who died of other causes; and sixteen (20 per cent) of those with quiescent or healed lesions. In other words, those with extensive lesions were better diagnosed than those with less extensive or healing lesions. From a clinical standpoint it is also important to realize that in this series tuberculosis was a disease of adults rather than children. Only four cases occurred in patients under twenty years of age, and the great majority were over thirty-five years of age.

An interesting disclosure from a clinicopathologic standpoint is the presence of some evidence that the tuberculous lesions were activated or disseminated by infection or by surgical procedures. Thus three cases of meningitis followed attacks of pneumonia superimposed upon unrecognized pulmonary tuberculosis; one case of meningitis followed the surgical removal of a tuberculous epididymis and testis, and one case of peritonitis progressed rapidly after appendectomy.

Viewed as a public health problem it is evident that each of the active cases in the above series was a possible source of infection for persons with whom they came in contact. The future reduction in the morbidity and mortality rates of tuberculosis demands that both the active and contact cases be detected. This task is one for the medical profession to solve. They can do so by realizing that the disease is still relatively common, by conducting intensive studies in detecting those with the disease, and by searching out those whom they may have infected. The proved value of the tuberculin test as an aid in detecting both groups is good evidence that it should be used as a routine test upon all patients, rather than only on those with symptoms of tuberculosis. When the reaction is positive appropriate methods must be taken to determine the exact status of the tuberculous lesion in the patient's body and to institute the indicated treatment. If these procedures are carried out in an intelligent and systematic manner, the white plague morbidity and mortality rates will continue to fall.

INTERNATIONAL MEDICAL ASSEMBLY

This year's International Assembly of the Inter-State Postgraduate Medical Association of North America will be held at the Palmer House, Chicago, Illinois, October 30, 31, November 1, 2, and 3.

The officers of the Association and those of the Chicago Medical Society and the State Medical Society of Illinois, extend a very cordial invitation to all members of the profession in good standing in the state of Iowa to attend the Assembly. The high standing of the medical profession of Chicago, combined with the unusual clinical facilities of its great hospitals and excellent hotel accommodations, make this city an ideal place in which to hold the Assembly.

The members of the profession are urged to bring their ladies with them, since a very excellent program is being arranged for their benefit by the Ladies' Committee. Chicago has many places of interest, which will make this year's program especially attractive to them.

The stage is set for an intensive week of postgraduate medical instruction which it is hoped will contribute valuable scientific and clinical knowledge to the medical profession of North America. The program has been arranged by the program committee to meet the requirements of the general practitioner as well as the specialist. It consists of some eighty clinics and addresses covering the latest advancements in medical science. The contributors have been selected from among the most outstanding teachers and clinicians of North America. The registration fee of $5.00 admits all members of the profession in good standing.

Pre-assembly and post-assembly clinics will be conducted in the Chicago hospitals on Saturday, October 28, and Saturday, November 4, for visiting members of the profession. Programs have been mailed to every member of the medical profession in good standing in the United States and Canada. Any member of the profession in good standing who has not received a program, may obtain one by writing Dr. William B. Peck, the managing-director, at Freeport, Illinois. Other officers of the organization are Dr. George W. Crile, president and chairman of Program Committee, Cleveland, Ohio; and Dr. Chevalier Jackson, president-elect, Philadelphia, Pennsylvania.

We call your attention to the list of distinguished teachers and clinicians who are to take part on the program and whose names appear on page viii of the advertising section of this JOURNAL.

State Department of Health

Walter L. Bierring

ANNOUNCING PNEUMOCOCCUS STUDY COURSE

Arrangement has been made for a Pneumococcus Study Course to be held at the department's State Hygienic Laboratory in Iowa City. The course will be given under the direction of M. E. Barnes, M.D., Dr.P.H., professor of hygiene and preventive medicine, University of Iowa, and director of the State Hygienic Laboratory, assisted by Associate Director I. H. Borts, M.D., and other members of the staff.

The three-day course is scheduled for Tuesday, Wednesday and Thursday, October 31, November 1 and November 2, 1939. The course, comprising lecture and laboratory periods, will be held in the Medical Laboratories Building at Iowa City. The Registration Office for the course is on the second floor near the southwest entrance.

The Pneumococcus Study Course is intended primarily for laboratory workers and attending physicians associated with pneumonia typing stations. Laboratory technicians and physicians interested in pneumococcus typing may register for the course by addressing a letter to the State Department of Health, Des Moines, Iowa. Funds assigned to the department through the United States Public Health Service make it possible to reimburse the registrants for most of the travel and other expenses incident to the course.

Those registering are urged to take with them their own microscope; this is desirable not only because of the shortage of microscopes at the laboratory, but because of the decided advantage attending the use of an instrument with which the worker is thoroughly familiar.

MEETING OF PNEUMONIA CONTROL ADVISORY COMMITTEE

The first meeting of the Advisory Committee on Pneumonia Control, of the Iowa State Medical Society, was held in the Commissioner's office at the State Department of Health on Friday, September 22, 1939. Present at the meeting were the Health Commissioner and the following committee members: Fred M. Smith, M.D., Iowa City, professor of theory and practice of medicine, University of Iowa; Benjamin F. Wolverton, M.D., Cedar Rapids; Herbert W. Rathe, M.D., Waverly; Albert A. Schultz, M.D., Fort Dodge; Dennis H. Kelly, M.D., Des Moines; and Carl F. Jordan, M.D., Des Moines. Dr. Smith was elected chairman of the committee and Dr. Jordan secretary.

The committee discussed the use of sulfapyridine and the method of distribution of serum for the underprivileged patient. In view of the reported effect of the drug in causing loss of specificity and decapsulation of the organism (see May number of the Journal, page 214), the committee stressed the need for and importance of pneumoccocus typing before treatment with this drug is instituted. The plan was endorsed whereby the State Department of Health distributes diagnostic antipneumococcic serum without cost to typing centers.

The committee approved the arrangement for a Pneumococcus Study Course to be held at the State Hygienic Laboratory and emphasized the value of and need for more laboratory workers with special training and experience in the technic of pneumococcus typing.

The committee discussed the preparation of a brochure containing a concise outline of the management of pneumonia, copies of which will be placed in the hands of all medical practitioners of the state. Committee members are preparing material for this outline.

Another meeting of the committee will be held in Marshalltown, Sunday, October 15.

POLIOMYELITIS IN 1939

Prevalence in Iowa.

Poliomyelitis, as far as Iowa is concerned, developed unusual prevalence much later in the season in 1939 than in former years; in the past undue occurrence of this disease has usually begun in July or early in August. This year only one case of the disease was reported to the State Department of Health in July. During August, when it was expected that at least eleven cases would be reported (this figure being the average number of cases reported for the nine year period from 1930 to 1938), only six cases were officially notified to the department. The expected number of cases in September was nineteen, since this was the

average of cases reported for this month during the past nine years. However, twenty-nine cases were reported during September (through the 28th) indicating that the incidence of poliomyelitis at this time is definitely greater than normal.

Prevalence in Nearby States.

Since the middle of July, poliomyelitis has had abnormal occurrence in some of the neighboring states, notably Michigan and Minnesota. According to the Health Officers' Weekly Statement, as issued by the United States Public Health Service, Michigan reported 613 cases beginning with the week ending Saturday, July 15, and extending through Saturday, September 9. For the same period of nine weeks, 281 cases were reported in Minnesota. In marked contrast, other states adjacent to Iowa, prior to September, reported no more cases than in 1938, a year of low prevalence.

Distribution of Reported Cases in Iowa.

The accompanying spot map shows distribution by counties of the 37 cases of poliomyelitis reported thus far in 1939 (through September 28). It will be noted that with the exception of Madison county, the disease has shown its usual sporadic type of distribution in counties in various sections of the state.

Outbreak in Madison County.

In September the virus was apparently concentrated to an unusual degree in Madison county, particularly in Winterset and vicinity. Twelve cases were reported, representing an attack rate of 8.4 per 10,000 population as compared with .07 per 10,000 population for the state as a whole. Among the twelve reported cases, two resulted fatally.

Convalescent Serum Available.

During August and September, the department's Serum Center conducted two bleeding clinics in Des Moines and one in Sioux City; the number of donors totaled 83. Physicians desiring convalescent serum for preparalytic or suspected cases of poliomyelitis may obtain the same by communicating with the State Department of Health.

WHOOPING COUGH SERUM AVAILABLE

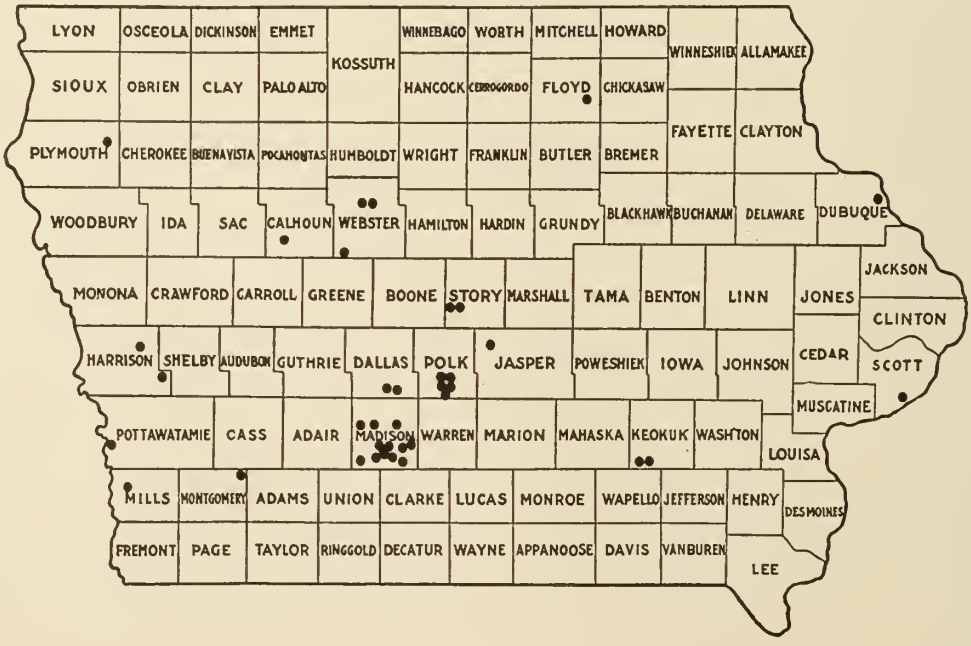
The State Department of Health announces that it has available for distribution a limited supply of pooled convalescent whooping cough serum. This has been prepared in the same manner as that for measles, scarlet fever, poliomyelitis, Rocky Mountain spotted fever and tularemia.

The chief value of convalescent or immune pertussis serum seems to be in prophylaxis following exposure to the disease; however, this serum has been used in therapy as well. The average amount for prophylactic use is ten cubic centimeters. When administered after onset of symptoms, serum dosage may vary from thirty to sixty cubic centimeters; favorable results are reported when serum is given in adequate amount and early in the course of illness.

Recent articles on the use of human immune or convalescent serum in prophylaxis and therapy of whooping cough are listed below:

1. Dwan, Paul F., and Platou, Erling S.: Hyperimmune human serum in the prophylaxis and treatment of pertussis. Jour. Lancet., lix:377-379 (September) 1939.
2. Clarke, Floyd: Therapy of convalescent human serum. Nebraska State Med. Jour., xxiv:55-58 (February) 1939.
3. Hyland, C. M.: The value of convalescent serum in the acute contagious diseases. Nebraska State Med. Jour., xxii:342-348 (September) 1937.

POLIOMYELITIS AS REPORTED IN 1939 (THROUGH SEPTEMBER 28)



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THE TOXEMIAS OF PREGNANCY

It has been recognized for some time that in normal pregnancy there is an increase in blood volume, due chiefly to an increase in plasma volmue, with an associated hydremia. Several workers have demonstrated a decrease in plasma-protein concentration during pregnancy, and this has been attributed to the existing hydremia. The majority of pregnant women exhibit some degree of edema and it is thought that normal pregnancy is accompanied by a positive water balance.

The work of Strauss has been an endeavor to demonstrate the relationship of hypoproteinemia to the development of the toxemias of pregnancy. According to Strauss in the absence of severe anemia, heart failure and acute nephritis, water retention in pregnancy is conditioned primarily by the level of the plasma protein, and may be altered by changing the intake of the electrolytes. He likewise contends that with the induction of marked water retention by the administration of sodium salts in pregnant women with hypoproteinemia, the arterial pressure rises and symptoms of eclampsia appear.

In support of his argument Strauss demonstrated that in normal pregnancy with an average diet the average plasma-albumin value was 3.7 grams per 100 cubic centimeters; in non-convulsive toxemia, 3.1 grams; and in eclampsia, 2.6 grams. The administration of a diet high in protein and Vitamin B_1, parenterally, to a group of patients with toxemia of pregnancy resulted in loss of weight, fall in blood pressure and eventual disappearance of the signs and symptoms of toxemia. He concludes first, that true toxemia of pregnancy results from undue water retention attributed to hypoproteinemia; second, that toxemia may be prevented by an adequate diet, maintaining the plasma-protein concentration at a normal level; and third, that the manifestations of toxemia may be relieved by measures which combat water retention (high protein and low salt diet).

Melnick and Cowgill in an endeavor to explain the low plasma-protein concentration in pregnancy have demonstrated in dogs that the pregnant animal has a very limited amount of reserve plasma-protein, much less than the non-pregnant animal. They conclude that the parasitic effect of the fetus on the maternal organism is the primary cause, over and above any hydremia, in producing lowered serum protein concentrations in pregnancy.

If the conclusions of Strauss are entirely sound why are there so few cases of toxemia when edema is so common in pregnancy? Likewise, if hypoproteinemia of pregnancy produces arterial hypertension, why is it that in nephrosis with a marked hypoproteinemia there is no increase in arterial tension?

The studies of Strauss and those of Melnick and Cowgill clearly indicate that the common practice of dietary protein restriction in normal pregnancy and in the toxemias of pregnancy is contrary to all the indications, and should be condemned. The plasma-protein concentration should be maintained at a normal level by an adequate protein intake.

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1. Strauss, M. B.: Observations on etiology of toxemias of pregnancy; relationship of nutritional deficiency hypoproteinemia, and elevated venous pressure to water retention in pregnancy. Amer. Jour. Med. Sc., cxc:811-824 (December) 1935.
2. Strauss, M. B.: Observations on etiology of toxemias of pregnancy; production of acute exacerbation of toxemia by sodium salts in pregnant women with hypoproteinemia. Amer. Jour. Med. Sc., cxciv:772-783 (December) 1937.
3. Strauss, M. B.: Observations on etiology of toxemias of pregnancy; lack of influence of Vitamin B (B_1) on water retention in toxemias of pregnancy. Amer. Jour. Med. Sc., cxcv:516-518 (April) 1938.
4. Strauss, M. B.: Observations on etiology of toxemias of pregnancy; etiologic relationship between water retention and arterial hypertension. Amer. Jour. Med. Sc., cxcvi:188-198 (August) 1938.
5. Melnick, D., and Cowgill, G. R.: Influence of pregnancy and lactation upon regeneration of serum protein. Jour. Exp. Med., lxvi:509-526 (October) 1937.

PAID NEWSPAPER ADVERTISING

A definite trend toward increased utilization of newspaper columns for the purpose of educating the public in medical matters, is apparently underway. Reports of such action have come to our attention from such states as New Jersey, Massachusetts, Florida, Arkansas and Kansas. In the August 3, 1939, issue of the Spencer, Iowa, *Times*, appeared an editorial taking the medical and dental professions to task for their previous unrelenting attitude toward institutional advertising. No quarrel was found with the principle which prohibits advertising by the individual, for as the editorial correctly states, "Before long it would be the best advertiser, and not the best physician or dentist who would be serving most of the public."

"But why," asks the editorial, "should lives be lost because of ruptured appendices brought about as a result of the home administration of a physic as a cure for localized pain? Why should a child suffer a deformed mouth because milk teeth were pulled too soon? Proper education through institutional advertising could aid humanity in their ignorance on these subjects and at the same time create greater faith in the medical and dental professions, thus increasing the number seeking advice from doctors and dentists which in turn would produce the monetarial result which in the last analysis is the intent of all advertising."

Unquestionably there is a degree of justification for the complaint registered by this editorial writer. However, we would point out that as far as we are aware, organizational units of either the medical or dental professions violate no principle of ethics by advertising in newspapers when such advertising is done in the name of a unit. Violation of the "principles of medical ethics" occurs only when such advertising leads to individual aggrandizement. Nor are we so much interested in that phase of newspaper advertising which attempts to educate the public in the diagnosis and treatment of disease entities, *per se*. What the public needs to know and know well is the advantage it enjoys under the present system of democratic medical practice in contrast to what would obtain under a politically controlled profession. In the past several years, John Q. Citizen has been bombarded from all angles with propaganda on the lack of adequate medical facilities. Medical men know that much of this propaganda is exaggeration, and that ignorance on the part of the laity as to how to utilize available medical service is a far more important factor than any alleged deficiency in our present medical system. While passage of a National Health Act has been postponed for the time being, it is almost certain to be enacted in some form in the next session of Congress. It would seem to the JOURNAL then that now is the time to acquaint the citizens of our state with the policies, aims, methods, and ideals of our profession.

The county medical society is the logical medical unit to originate educational material, and we believe the local newspaper is the logical medium through which these accurate facts should be brought to the attention of the people. To borrow several phrases from the Committee on Public Relations of the Medical Society of New Jersey, "The public must be told how it benefits from a system of medical practice which is free from coercion and political red tape, and how politicalization of medicine will result in a poorer type of medical care for them." . . . "What is advocated in this program is the advertising of the institution of the private practice of medicine, not the advertising of the individuals who comprise that institution. It is in keeping with medical ethics to try to preserve the best system of medical care, judged by results, which exists anywhere in the world, and to keep it free from unnecessary political restraints."

THE IOWA STATE FRACTURE CLINIC

Following the policy which was established by the Iowa State Medical Society two years ago, a State Fracture Clinic will be held at the Hotel Fort Des Moines on Wednesday, November 8, 1939. In carrying out a one-day intensive fracture clinic, it is the belief of the State Fracture Committee that concise and valuable information on the care and handling of the rapidly growing service on highway and industrial accidents can best be given to those members of the Iowa State Medical Society who are particularly interested in this branch of medical practice.

The morning will be entirely given over to the clinical presentation of cases, with adequate time for discussion by all the attending doctors. The afternoon will be devoted to papers presented by men of high authority from our adjoining states. It is the hope of the Fracture Committee that all and divergent methods, both new and old, may be considered and discussed. This wide presentation of methods, with the opportunity to observe final results in the hands of different doctors, should make this State Fracture Clinic increasingly valuable from year to year.

Your committee has made a sincere effort to establish a fracture chairman in each county medical society, whose function will be to organize and conduct one fracture meeting each year in his particular county. For this county meeting, there will be available from the central office of the State Society, moving picture films on varying problems of the transportation and treatment of fractures. Since only one set of films will be available for ninety-nine counties, all the chairmen are urged to arrange, well in advance, for a specific date for showing these films to the members of their county societies. It is hoped that from year to year, this library of films may be steadily enlarged and constantly available for both state and county meetings.

It should be emphasized that all members of the State Society are urged to attend the State Fracture Clinic on November 8, and that the attendance is not limited to county fracture chairmen.

IOWA'S CAMPAIGN AGAINST SMALLPOX

The Journal believes the attention of its readers should be directed to the splendid cooperative project now well under way between the Iowa State Medical Society, through its Committee on Child Health and Protection, the State Department of Health, county medical societies, and various lay organizations. This project has for its objective the eventual eradication from every community in Iowa of that completely unnecessary disease—smallpox. For many years health-minded Iowans have gloomily regarded the comparative statistical tables of smallpox morbidity as given for various parts of the country. Invariably the figures told the same story. Iowa ranked well at the top of the states with the highest rate. The climax was reached when the 1938 record was published. Iowa reported 1,170 cases of smallpox, while New York, Vermont, Massachusetts, Connecticut, New Jersey and Pennsylvania with a population 13.5 times that of Iowa, reported not a single case!

Last year the Committee on Child Health and Protection decided something should be done to remedy this condition. It recommended to the 1939 session of the House of Delegates that a statewide immunization campaign against smallpox be undertaken. The recommendation was approved and work upon organization of the project was begun at once. Since that time many hours have been spent by individuals from the various cooperating groups in perfecting arrangements for the program. The actual administration of the vaccine will take place on the days between October 30 and November 11. Some seventy-five of the county medical societies in the state have appointed special committees to take active charge of the work in their respective communities. One feature of the campaign which will be watched with a great deal of interest is the use of newspaper advertising. We are informed that a number of county societies are paying for one or more advertisements in their local newspapers. If this method of approach proves practicable, the result may be a much more extensive use of newspapers as a means of lay education than has ever before been attempted.

The Journal hopes physicians everywhere in the state will lend their support to the successful completion of the smallpox campaign. Its degree of success can readily be measured in the months to come by the decrease in the number of cases of smallpox reported. If this type of campaign fails to bring home to our citizens the seriousness of the situation sufficiently to make them act, the only other alternative is recourse to a campaign to force vaccination by legislative edict. It is to be hoped that the people of Iowa will live up to their reputation of having one of the highest levels of intelligence in the country, and that no measure other than education will be necessary to place Iowa in an improved position as regards her smallpox morbidity rates.

MEDICAL SOCIETY EXPERIMENTS IN CARE OF THE INDIGENT

Continuing our policy of acquainting the members of the Iowa State Medical Society with the contents of the recent A. M. A. publication, entitled, "Organized Payments for Medical Services," we present in this issue, excerpts from that section of the booklet dealing with the efforts of various county and state medical societies to solve this problem in a satisfactory manner.

With that willingness to experiment which, in spite of its critics, the medical profession has shown to as great a degree in the social as in the scientific field, a large number of county medical societies attempted to develop methods of meeting this situation. The first objective was a high standard of medical care for the indigents and, as far as possible, an equal distribution of the burden of gratuitous care on the whole body of organized physicians. The most successful of these plans, although none of them has escaped some criticism from their creators and administrators, came to be known as the "Iowa Plan" because of its origin in that state.

In the beginning, some of the county medical societies simply proposed to assume the responsibility for the medical care of the indigent in return for whatever sums were available. The county medical societies then arranged, first, for a free choice of physician from among all their members, and second, some regular routine of assignment of members to those patients who did not express a choice of physician, so as to secure as nearly an equitable distribution of the burden on the entire profession as was possible. Since it had always been recognized that this service was a part of the duty assumed on entering the profession, the original schemes did not provide for any distribution of the money received among the individual physicians rendering service. The funds received from county officials went directly into the treasury of the county medical societies, where it was used for whatever purposes it was felt would best advance the interests of the profession. Among the more common ways in which it was expended were the payment of medical society dues, rent of medical society headquarters, accommodations, purchase of books or periodicals for the local medical library, payment of premiums for malpractice insurance, etc.

Recent social changes have been extraordinarily rapid and in few places have these changes been more rapid than in the medical care of the indigent. As numerous counties adopted plans to care for the indigent, the original pattern was more or less modified.

When ten to thirty per cent, and in some localities even more, of the population were forced to depend on some form of relief agency for medical care, the necessary expenditures by relief authorities became too large to be treated in the same manner as was done in the early experiments. At the same time the incomes of physicians dropped and so much of their time was devoted to care of the indigent that county medical societies were compelled to apportion the money received from relief authorities among their members according to the services rendered.

Two main types of county medical society plans are described in a study made by the State Board of Social Welfare of Kansas.

1. A contract plan, whereby the county paid to the local medical society or a group of organized doctors at stated intervals a specified lump sum, in return for which all members signing the contract agreed to furnish needed medical services to public assistance clients. The sum was either placed in the group's treasury for educational purposes, or prorated among the members.
2. A fee method of payment open to physicians, whereby a schedule of fees was established by agreement of the county welfare board with the medical society, or with unorganized physicians; or whereby the amount of payment was set by the county board or the county director of social welfare.

It was the consensus of the Committee that the most desirable plan for providing medical care to public assistance recipients would:

1. Allow the county board to estimate, budget and control the expenditures for medical care;
2. Provide for an individual accounting of services rendered so that state and federal reimbursement may be obtained;
3. Provide the most adequate medical facilities and professional services;
4. Maintain the traditional physician-patient relationship in which the recipient needing medical care may consult a physician of his own choosing; and
5. Provide compensation for all physicians rendering medical services to public assistance recipients.

County medical society plans for furnishing medical care to the indigent are so diverse in their character and sometimes so transient in their operation that no complete or up-to-date census of them has been possible. It is, however, a safe estimate that more than two hundred such plans were in operation in the United States in 1938. Some have been found unsatisfactory and have been abandoned. Many of them have been changed in type. Some have evolved into medical service plans for the low income groups, while still others have become an integral part of a statewide organization and have thereby lost much of their local identity. Because such experiments are now in operation and probably will continue, and since such plans are based on somewhat different types of contract between the county medical society and the administrators of poor relief, some samples of these contracts are given.

At this point in the report are found copies of various contracts, including the following: Washington County (Iowa) Medical Society contract with the Washington County Board of Supervisors; Butler County members of the Butler-Greenwood County (Kansas) Medical Society contract with the Board of Butler County Commissioners; and the model contract form adopted by the Iowa State Medical Society for the use of county medical societies in the state in contracting with local boards of supervisors. The booklet also carries the report of the State Secretary to the Iowa House of Delegates in 1937, which summarized the lessons learned throughout experimentation with this plan. The following paragraphs are again quoted directly from the pamphlet.

The whole problem of medical care for the indigent has been greatly affected not only by the Social Security legislation, but by the creation of forms of federal relief such as the Works Progress Administration, the Public Works Administration, old age pensions, the Farm Security Administration, and unemployment compensation. So far as the first three of these categories are concerned, the relief given is seldom sufficient to provide for more than such necessities as food, clothing, and shelter, and the recipients still remain in the class of the medically indigent. Reports from several states indicate that plans for the care of the indigent will in the future be compelled to take into consideration these classes of persons. This will almost certainly require further adjustments of most existing plans and also the development of sympathetic working relations between the administrators of such forms of assistance and medical societies.

One vital phase of the problem of the care of the indigent is the cost of, or at least the expenditure for, medical service. The available figures pertaining to the costs of medical care are so confused by large items of gratuitous and low-pay care and by an intermixture of other than purely medical elements that not only are the variations between different localities so wide as to bar any common conclusions, but all figures must be considered as of somewhat doubtful accuracy.

In attempting to calculate the cost of medical care for the indigent, a number of items must be included which are not met with in ordinary business transactions. Usually the funds available are too small to afford good medical care at current prices for service and medical supplies. There is almost always an important element of gratuitous service on the part of physicians, dentists, pharmacists, and hospitals. One of the problems that the county medical society must solve is to spread what funds are available in such a way as to deliver the best possible medical service. A county medical society must approach these problems honestly, with a determination to uphold the standards of medical practice and medical ethics even at some sacrifice in the payments made to its members, and with full recognition of the fact that they are thereby assuming a portion of the financial burden which should be borne by the entire community. This reduction in the amount received for services rendered represents the physicians' contribution to the care of the indigent.

Fundamentals of Pathology in Pneumococcic Lobar Pneumonia*

James E. Kahler, M.D., Pathologist
Iowa Methodist Hospital
Des Moines, Iowa

These epitomes of pathologic entities pretend to be neither comprehensive presentations nor original contributions. Their sole purpose is to review for the busy practitioner certain fundamentals of pathology which he once knew but has more or less forgotten.

Lobar pneumonia is a distinct clinical and pathologic entity. The gross and microscopic appearances of the lesion are considered to be well worked out and in many textbooks are used as teaching examples of an inflammatory process. Most of these details were described long before a specific treatment for the disease was known, and renewed interest follows the advent of serum and chemotherapy. To gain a complete picture of lobar pneumonia it is still necessary, however, to add to the lesions found in man the results of experimentation with certain animals in which a disease can be produced which is similar to that observed in humans. Otherwise, details of pathogenesis are necessarily lacking, for there is little opportunity to examine the human lesion, especially within the first few hours of its inception.

ETIOLOGY

According to Bullowa and Gleich most pnemococcic pneumonias are produced by pneumococci Types I, II, III, IV, V, VII, VIII, XIV, and XIX. Among infants and children, Types XIV, VI, and I are most frequent; among adults, Types I, III, II, V, VIII, VII, and IV, in the order mentioned, account for most of the pneumonias. Infrequently, lobar pneumonia is caused by more than one type of pneumococcus, evidenced usually by recurrence of fever after a primary therapeutically induced remission.

PATHOGENESIS

Blake and Cecil produced lobar pneumonia in monkeys by the intratracheal injection of a pneumococcus culture. The earliest lesion occurred at the hilus and the process rapidly extended through the lobe to the periphery of the lung. Within three hours of the injection the cocci had invaded the walls of the bronchi exciting an exudate composed chiefly of serum plus a few polymorphonuclears and monocytes. This exudate, containing members of cocci, spread through the peribronchial and perivascular tissue and could be found in the air ducts and atria but preceded exudation within the alveoli. The interlobular septa also were involved, and this was accompanied by an intense engorgement of the blood vessels. Within a short time the alveolar walls became swollen, infiltrated by polymorphonuclears and mononuclears, and the alveolar capillaries became engorged. Still later intra-alveolar exudation occurred, consisting first of serum plus cocci, followed by the appearance of numerous red blood cells and varying numbers of leukocytes. When this stage of red hepatization occurred at the hilus it was surrounded by a zone of engorgement and more peripherally by a zone of peribronchial edema; when the periphery of the lobe was in a stage of red hepatization the hilar lesion was one of gray hepatization. The stage of edema and engorgement lasted twenty-four hours or less; that of red hepatization lasted up to the fifth day. Only in animals who survived more than six days was uniform gray hepatization observed.

A pneumonic process, less closely simulating the human disease than that produced in monkeys, can be imitated in dogs by intratracheal implantation of rather large doses of pneumococci. Coryllos and Birnbaum sprayed large quantities of pneumococci through a bronchoscope, either with or without occlusion of the main bronchus, to produce pneumonia. Robertson and his co-workers successfully produced lobar pneumonia in the dog by introducing pneumococci in a viscid suspension of starch by means of a catheter as far into the bronchial tree as the size of the catheter would permit. Within one hour of such an injection an area three to four millimeters in diameter at the periphery of the lung was produced. In the center of this lesion were alveoli filled with starch, cocci, red blood cells, leukocytes and serum. Surrounding this exudative area was a zone of edema in which the alveoli contained serous fluid plus many cocci. There were, in addition, extensive interstitial changes with perivascular edema and hemorrhage and peribronchial infiltration with

*Editor's Note: This article has been especially prepared by Dr. Kahler at our request. We hope to present, in subsequent issues of the Journal, additional articles dealing with fundamental principles of pathology.

polymorphonuclears. In later stages the process extended radially from the initial lesion so that its periphery was always composed of edema-filled alveoli which gradually became filled with cellular exudate. In the earliest phases of the lesion the spread of infection seemed to be principally by way of the lymph and blood capillaries; later, by cocci-laden edema-fluid through the interalveolar spaces and small air passages. According to Loeschcke this latter method of spread is that observed in the early lesion in man. These experiments indicate that it is important, at least in the dog, first, to introduce the pneumococci into the alveoli of the lung; second, to introduce them in such a manner that they are difficult to remove by normal mechanisms; and third, that there be local injury to the pulmonary tissue.

It is probable that the results of neither of these experiments are directly applicable to human pathology, but they do permit thought along certain lines. Blake and Cecil produced lobar pneumonia in healthy monkeys by intratracheal injection of pneumococci without more trauma than that produced by a small needle passing between the tracheal rings (local inflammation in the trachea was not produced). This has its counterpart in the commonly observed onset of lobar pneumonia in previously healthy humans. The observation that alcoholic and ether intoxication render leukocytes less able than normal to phagocytize pneumococci also indicates that the initiation of the pneumonic process is occasioned by a general lack of resistance rather than by some local change. Robertson, on the other hand, observed that the natural pneumococcidal potency of the blood in humans with lobar pneumonia was, in many instances, present in normal amount at the beginning of the disease. This would predicate some local disturbance within the lung before the disease could be produced. Other authors have shown that irritant gases and even exposure to cold have a deleterious effect upon the normal mechanism of ridding the air passages of foreign material, and it may be true that, given the presence of pneumococci within the lung, failure to remove them rapidly may permit initiation of pneumonia. Observations on animals further illustrate that lobar pneumonia is a progressive disease, and the concept that pneumonia is divided into four definite stages is only for convenience in description.

GROSS PATHOLOGY

As stated above lobar pneumonia is commonly divided into four stages: the stages of engorgement, red and gray hepatization and, finally, resolution. However, the first and last stages are rarely seen. In fact, the usual appearance at death from lobar pneumonia is a transitional stage between red and gray hepatization. During the stage of engorgement the involved lobe is probably normal in size, deep red in color with a smooth and glistening surface. The cut surface is similarly deep red in color and moist. The lobe is still fairly well aerated. This stage is observed only in the first twenty-four hours of the disease unless the lesion continues to spread to other lobes. Under these circumstances it may be observed at the advancing periphery of the lesions.

After the first day of the disease the affected lobe changes radically in appearance. The pleural surface becomes dull, due to the presence of a very thin layer of fibrin beneath which the lung is dark red in color. The lobe is firm and increased in consistency, retaining its size and shape after removal from the body. The cut surface is dry, deep red in color and granular in appearance. The bronchial walls are thickened, their lining membrane congested and their lumina sometimes occluded by fibrinous exudate. It is probable that this stage of red hepatization extends to and even beyond the time of crisis.

With further change in the cellular exudate, the stage of gray hepatization supervenes. The pleural surfaces are covered by a thick layer of fibrin. A small amount of fibrinopurulent fluid occurs in the pleural cavity. This pleural reaction often extends far beyond the limits of the pneumonic lesion. The consolidated lobe is larger than normal, firm in consistency and markedly increased in weight. The cut surface varies with the condition of the exudate: in the early part of this stage it is grayish red in color, dry, and finely granular in appearance; later, the color changes to gray or grayish yellow and the cut surface becomes more moist and may have a purulent appearance. Presumably gray hepatization occurs at a time when local resistance has overcome the infecting organism and therefore makes its appearance subsequent to the clinical "crisis."

THE CRISIS

The crisis in lobar pneumonia is one of the most interesting features of the disease, but one about which there is a great deal of uncertainty. One important fact is well known, however, and that is that the crisis does not necessarily indicate a change in the consolidation in the lung. The consolidation may remain apparently unaffected for some days after the crisis, and even when beginning involution of the inflammatory process does coincide with the crisis, complete healing should be expected in weeks rather than days.

None of the popular theories regarding the cause of crisis is entirely acceptable. Some of the more important of these are: the formation of a sufficient amount of antibodies to neutralize the toxic effect of the pneumococci; the formation of humoral or local protective substances capable of destroying pneumococci; a mutation of "smooth" to "rough" organism. Finally, it has been suggested that the crisis is an anaphylactic or allergic phenomenon. In any case the occurrence of crisis makes little immediate change in the gross or microscopic appearance of the lesion and the latter still flourishes in spite of the subjective improvement.

In this connection it should be remarked that no data are available at present as to the direct effect of serum or chemotherapy on the gross or microscopic appearance of the lesion. In about one-fourth of lobar pneumonia cases in adults a generalized infection accompanies the lung lesion and several interesting facts in relation to the time of crisis have been pointed out by Blake and Cecil. They have shown that the septicemia may clear up several days before resolution of the pneumonic process occurs, while on the other hand, the septicemia may continue after resolution of the pneumonia is apparently complete. Such observations may well be remembered by physicians who treat pneumonia with serum or chemical specifics and consider the patient cured when the temperature course has dropped to normal and remained there for a day or two.

During the rarely observed stage of resolution the lung surface regains its smooth shining appearance and the whole involved portion which is still larger than normal has a peculiar translucency. The lobe is soft and doughy in consistency. The cut surface is dull gray in color and exudes a dull grayish yellow material which decreases in amount as full recovery occurs. It is never possible to determine by clinical or roentgenologic means when resolution is complete, since unresolved foci, minute in size, may remain weeks or months after all clinical signs have disappeared. After true recovery from lobar pneumonia the lung returns to normality, that is, no vestiges of the inflammation remain and full aeration of the involved portions returns.

Any or all of the lobes of the lung may be involved by lobar pneumonia. In the great majority of cases more than one lobe is involved. The order of frequency in which the various lobes are involved is: left lower, right lower, right upper, left upper, right middle (Cecil). Occasionally lobar pneumonia may be restricted to the apical portion of either upper lobe. More often, the process may involve the entire left or right lung (five per cent of cases). Four lobes of the lung were involved simultaneously in 1.5 per cent of Cecil's cases.

PATHOLOGIC HISTOLOGY

Again it is customary to describe the lesion as presenting itself in four stages corresponding to those already outlined under gross pathology, but again it should be remembered that the process is a continuous one with the stages gradually merging into one another. If a single alveolus were followed through from the beginning of the disease to complete resolution, the following changes would be seen. The capillaries within the alveolar wall dilate and are engorged with red cells. An edema of the alveolar wall occurs and there is swelling of its lining cells. Serous fluid gradually extends into the lumen accompanied by red blood cells. Pneumococci are seen in numbers, both within the alveolar exudate and in the alveolar walls. As the edema fluid increases the air content diminishes. Within the exudate the number of red cells gradually increases and polymorphonuclears make their appearance accompanied by a few strands of fibrin. Within several hours sufficient fibrin appears to form a loose meshed clot entangling the intact red and white blood cells. Phagocytosis of pneumococci by neutrophiles and an occasional macrophage is slight in degree. Further development of the exudate consists in a great increase in the number of polymorphonuclears, overshadowing the red blood cells which begin to hemolyse. The exudate seems to expand the alveolus so that its walls appear collapsed and the capillaries within them occluded (although experimentally these capillaries remain patent). The capillaries may contain fibrin clots. The interstitial edema and exudate disappears. At this stage few pneumococci are seen within the exudate and these are principally intracellular; none is seen within the alveolar walls.

Within a variable period following beginning clinical recovery the alveolar exudate undergoes further change in that marked autolysis of the intra-alveolar material occurs. The red cells become hemolysed, the fibrin becomes granular, and the neutrophiles lose their sharp outline and disintegrate. Numerous macrophages make their appearance, phagocyting the debris. The pneumococci seen at this stage also disintegrate and lose their staining quality. The exudate is finally completely disintegrated and disappears; portions of it leave the alveoli through the air route, but the majority of it is carried off in the lymphatics. Restitution to normal occurs with the replacement

of alveolar epithelium lost in some portions of the wall.

The work of Robertson indicates that in dogs recovery is dependent upon an adequate macrophage reaction. This reaction was observed within twenty-four hours of the beginning of the infection in some animals, but in those which died within two days of a fulminating process no macrophages were seen. If the animals survived four days there was a well developed macrophage response associated with a diminution or disappearance of the pneumococci and resolution of the exudate. However, this response was purely a local condition and resolution might occur, but the animal die from generalized infection or some complication. Failure for the macrophage reaction to occur resulted in the persistence of large numbers of pneumococci and eventual death of the animal even when the infection remained localized within the lungs.

Another stumbling-block in the recovery from pneumonia is the occurrence of organization. This consists of the ingrowth of fibroblasts from the alveolar wall into the exudate. The beginning of this process can sometimes be seen during the first day of the pneumonic process. Organization of portions of the exudate in all probability results from a stalemate between the toxicity of the pneumococci and the reactive powers of the host. Organized exudate, therefore, retains the potential power of relighting the infection. Since some areas of organized pneumonia are microscopic in extent it is readily possible for them to remain undiscovered for weeks or months following clinical recovery.

Pneumococcic lobar pneumonia is characterized in its healing by complete restitution to normal, but foci of organization occur in a sufficient number of cases to matter. This may be of importance in view of the fact that as far as is now known, drugs of the sulfonamide group are not germicides, do not excite phagocytic activity nor affect the rate of antibody formation (McIntosh and Whitby).

ASSOCIATED LESIONS

The bronchial lesions observed experimentally early in the disease more or less completely disappear although their lumina continue to contain exudate. Pleuritis is always present in true lobar pneumonia and this may be explained by the fact that lymph drainage in the peripheral few millimeters of the lung is toward the pleura rather than toward the hilus. During the early stages of the disease, the pleural exudate is composed almost solely of fibrin; later this exudate contains a few polymorphonuclears. Commonly there is an accompanying small amount of free fluid in the affected pleura composed of serum leukocytes, and cell debris. This exudate is sterile. Forty-two per cent of necropsies in patients dying of lobar pneumonia show histologic evidence of myocardial damage (Reimann). Toxic changes of a reversible character are observed in the parenchymatous organs. In five to ten per cent of cases there is some degree of jaundice. This jaundice is considered hematogenous by some authors, but in a minority of cases definite histologic evidence of liver damage can be found; central necrosis of the liver lobule and thrombosis of bile capillaries as well as parenchymatous degeneration of the liver cells themselves.

THE SCIENTIFIC PROGRAMS OF THE CHICAGO MEDICAL SOCIETY

The Chicago Medical Society is planning a series of all-day programs for the consideration of disease to be held on the third Wednesday of each month from October through April. In the morning and afternoon, there will be clinics, demonstrations, lectures and round table discussions on the general subject for the day, certain aspects of which will be presented at the evening meeting. The daytime portion of the program will be held in one or another of the teaching institutions of Chicago but will be a program of the Society presented in a certain institution rather than a program of the institution presented to the members and guests of the Society. The evening meetings will be held at the Chicago Woman's Club Theater on Eleventh Street near Michigan Boulevard. Detailed programs will be furnished each month.

The topics to be considered at these meetings are as follows:

October 18, 1939—Fractures at the Cook County Hospital. 8:30 p. m., The Treatment of Skull Fracture, Harry E. Mock, Chicago.

November 15, 1939—Nutritional Deficiency Diseases at Thorne Hall on the Chicago Campus of Northwestern University, 8:30 p. m., The Vitamin B_1 Complex and Pellagra, Tom D. Spies, Cincinnati, Ohio.

December 20, 1939—Cardiovascular-Renal Diseases at one of the institutions in the West Side Medical Center. 8:30 p. m., Arteriosclerosis Obliterans: The Modern Conception of its Social Significance, Diagnosis and Treatment, Irving S. Wright, New York, N. Y.

January 17, 1940—Industrial Medicine and Traumatic Surgery at St. Luke's Hosital. 8:30 p. m., The Evaluation of Disability Due to Cardiovascular Disease.

February 21, 1940—Topic and speaker to be selected.

March 20, 1940—Endocrinology at the University of Chicago Clinics. 8:30 p. m., The Misuse of Biologicals in Medical Practice.

(Continued on page 525)

SPEAKERS BUREAU ACTIVITIES

POSTGRADUATE COURSES

The final programs for the postgraduate extension courses which are being conducted in five councilor districts this fall are as follows:

First District Postgraduate Course

Medicine and Surgery

Every Other Thursday

Charles City

Cedar Valley Hospital

Chairman: O. H. Banton, M.D.

Oct. 5 "The Diagnosis and Treatment of Coronary Thrombosis," Fred M. Smith, M.D., Professor of Internal Medicine, University of Iowa.

Oct. 19 "The Anemias," Willis M. Fowler, M.D., Associate Professor of Internal Medicine, University of Iowa.

Decorah

Winneshiek Hotel

Chairman: L. J. Hospodarsky, M.D., Ridgeway

Nov. 2 "Pulmonary Tuberculosis," John H. Peck, M.D., Superintendent, State Sanatorium, Oakdale.

Nov. 16 "Management of Common Urinary Disorders," Nathaniel G. Alcock, M.D., Professor of Urology, University of Iowa.

Oelwein

Mealey Hotel

Chairman: C. C. Hall, M.D., Maynard

Dec. 7 "Common Gynecological Disorders," William F. Mengert, M.D., Assistant Professor of Obstetrics and Gynecology, University of Iowa.

Dec. 21 "Minor Surgery," Donald C. Conzett, M.D., Dubuque.

Hours:

5:00—6:00 Lecture
6:00—7:00 Dinner
7:00—8:00 Lecture

Second Councilor District Postgraduate Course

Algona Hotel, Algona, Iowa

Mondays

M. G. Bourne, M.D., Algona, Local Chairman

Oct. 2 "The Acute Abdomen," Arnold S. Jackson, M.D., Jackson Clinic, Madison.

Oct. 9 "The Treatment of Leukorrhea," Everett D. Plass, M.D., Professor of Obstetrics and Gynecology, University of Iowa.

Oct. 16 "Diagnosis and Treatment of Neurosis," Adolph L. Sahs, M.D., Associate Professor of Neurology, University of Iowa.

Oct. 23 "Endocrine Therapy; Its Application in General Practice," Daniel L. Sexton, M.D., Department of Medicine, St. Louis University School of Medicine.

Oct. 30 "Basic Problems in the Management of Fractures," Fremont A. Chandler, M.D., Associate Professor of Orthopedic Surgery, Northwestern University School of Medicine.

Nov. 6 "Gastro-intestinal Disturbances in Infants and Children; Convulsive Attacks in Infants and Children," Roger L. Kennedy, M.D., Professor of Pediatrics, The Mayo Foundation, Rochester.

Hours:

5:00—6:30 Lecture
6:30—7:30 Dinner
7:30—9:00 Lecture

Third Councilor District Postgraduate Course

Arlington Hotel, Sheldon, Iowa

Tuesdays

W. R. Brock, M.D., Sheldon, Local Chairman

Oct. 3 "The Acute Abdomen," Arnold S. Jackson, M.D., Jackson Clinic, Madison.

Oct. 10 "The Treatment of Leukorrhea," Everett D. Plass, M.D., Professor of Obstetrics and Gynecology, University of Iowa.

Oct. 17 "Hypertension with Complicated Heart Lesions," William D. Paul, M.D., Associate Professor of Internal Medicine, University of Iowa.

Oct. 24 "Endocrinology," Lester R. Dragstedt, M.D., Professor of Surgery, University of Chicago.

Oct. 31 "Basic Problems in the Management of Fractures," Fremont A. Chandler, M.D., Associate Professor of Orthopedic Surgery, Northwestern University School of Medicine.

Nov. 7 "Some Observations on Neuritis," Henry W. Woltman, M.D., Professor of Neurology and Psychiatry, The Mayo Foundation, Rochester.

Hours:

6:30—7:30 Dinner
7:30—9:30 Lecture

Fourth District Postgraduate Course
Medicine and Surgery

Mondays

Storm Lake

High School Building

Chairman: H. E. Farnsworth, M.D.

Oct. 2 "Management of Diabetes," Edwin B. Winnett, M.D., Des Moines.

Oct. 9 "Common Obstetrical Abnormalities," Leon S. McGoogan, M.D., Omaha, Assistant Professor of Obstetrics and Gynecology, University of Nebraska.

Oct. 16 "Backache," Lewis M. Overton, M.D., Des Moines.

Sac City

Park Hotel

Chairman: Harold N. Neu, M.D.

Oct. 23 "Hypertension," Edgar V. Allen, M.D., Assistant Professor of Medicine, The Mayo Foundation, Rochester.

Oct. 30 "The More Common Neurological Conditions," Ernest Kelley, M.D., Omaha, Associate Professor of Nervous and Mental Diseases, Creighton University.

Nov. 6 "How Can We Reduce the Mortality Rate of Acute Appendicitis?" Edwin L. Miller, M.D., Kansas City General Hospital, Kansas City, Missouri.

Hours:

7:00—9:00 Lecture

Tenth District Postgraduate Course
Medicine and Surgery

Tuesdays

Creston

Greater Community Hospital

Chairman: J. G. Macrae, M.D.

Oct. 3 "Management of Diabetes," Edwin B. Winnett, M.D., Des Moines.

Osceola

Osceola Country Club

Chairman: H. E. Stroy, M.D.

Oct. 10 "Common Obstetrical Abnormalities," Leon S. McGoogan, M.D., Omaha, Assistant Professor of Obstetrics and Gynecology, University of Nebraska.

Corning

Public Library

Chairmen: J. H. Wallahan, M.D., Wm. Amdor, M.D.
Carbon

Oct. 17 "Backache," Lewis M. Overton, M.D., Des Moines.

Osceola

Osceola Country Club

Chairman: H. E. Stroy, M.D.

Oct. 24 "Hypertension," Edgar V. Allen, M.D., Assistant Professor of Medicine, The Mayo Foundation, Rochester.

Creston

Greater Community Hospital

Chairman: J. G. Macrae, M.D.

Oct. 31 "The More Common Neurological Conditions," Ernest Kelley, M.D., Omaha, Associate Professor of Nervous and Mental Diseases, Creighton University.

Corning

Public Library

Chairmen: J. H. Wallahan, M.D.; Wm. Amdor, M.D.,
Carbon

Nov. 7 "How Can We Reduce the Mortality Rate of Acute Appendicitis?" Edwin L. Miller, M.D., Kansas City General Hospital, Kansas City, Missouri.

Hours:

7:00—9:00 Lecture

Each of these districts will hold weekly lectures for a period of six consecutive weeks with the exception of the first district whose meetings will be conducted on a bi-monthly basis. A registration fee of $7.50 will be charged for the series of lectures in the second, third, fourth and tenth districts, and individual lectures will cost $2.00. The fee for the first district course will be $6.50, and for individual lectures, $1.50. Those members who desire to enroll for any of the series of lectures should notify the local chairman in their district, or the Speakers Bureau.

ROUND TABLE DISCUSSIONS TO REPLACE "REFRESHER" COURSES

At a recent meeting of the representatives from the Maternal and Child Health Division of the State Department of Health and the Speakers Bureau, it was decided to substitute round table discussions on maternal and child health for the "refresher" courses in pediatrics and obstetrics previously held. Under this new plan for postgraduate instruction, a round table conference will be carried on by an obstetrician and pediatrician covering numerous and varied diseases in obstetrics and infancy. Case histories will be given to illustrate points in the discussion, and the local audience will be urged to present case histories of its own for review by the round table. Five minutes will be allowed for such presentations. Following the round table conference, moving pictures will be shown on the material discussed, or some closely allied subject.

The subject, "Prematurity from the Obstetric and

Pediatric Standpoint," will open the first series of round table meetings. As many as possible of the disturbances in the mother which tend toward the birth of a premature infant will be discussed from the obstetric angle. From the pediatric point of view, opportunity will be given to discuss the many problems associated with the nutrition and management of the premature infant. Among these may be mentioned feeding, temperature control, causes and treatment of cyanosis, mineral deficiencies, etc.

The Speakers Bureau will be able to start these programs after November 15. Centers will be selected approximately fifty miles apart in which the round table meetings will be conducted. Letters will be mailed from this office announcing the program, and requests for the instruction should be made by communicating with the Speakers Bureau. There will be no charge in connection with this education, since the expenses will be defrayed by federal funds.

ANNOUNCEMENT

The program of the Marshalltown postgraduate course which appeared in the September issue of the Journal has been rearranged, and the final schedule of the lectures for the months of November and December is as follows:

Nov. 7 Blood Diseases, Willis M. Fowler, M.D., Iowa City
Fractures, Donald C. Conzett, M.D., Dubuque

Dec. 5 Diseases of the Skin, Oliver S. Ormsby, M.D., Chicago
Some Clinical Aspects of the Colon, Rectum and Anus, R. Russell Best, M.D., Omaha

Dr. Adrien H. Verbrugghen of the Presbyterian Hospital in Chicago opened the first of the fall meetings on the course Tuesday, October 3, and very ably devoted his two-hour lecture period to discussions of "Medical Diseases of the Spine", and "Surgical Conditions of the Spine, with Reference to the Nervous System Only." Approximately sixty members were in attendance at this meeting.

LUTHER COLLEGE LECTURE SERIES

Thursday, September 28, marked the opening of another series of health lectures for the students of Luther College in Decorah, at which time Dr. Frank H. Reuling of Waterloo addressed this group on "Hygiene of the Eye, Ear, Nose and Throat," in the main auditorium of the college from 1:00 to 2:00 p. m. Dr. John H. Rieniets of Cedar Rapids appeared Thursday, October 5, as the second lecturer in the series and spoke on "Hygiene of Digestion."

For several years the Luther College Student Health Service has sponsored this health course in connection with its regular curriculum, and the series of lectures has recently been made compulsory for all new students.

Dr. R. M. Dahlquist, medical director of the institution, again requested the Speakers Bureau to cooperate in procuring speakers for the health course, and the following program will be presented on the schedule through the month of November. The remaining lectures will be published in an early issue of the Journal.

Oct. 19 "Hygiene of the Circulatory System," Leslie L. Carr, M.D., Clermont.
Nov. 2 "Hygiene of the Respiratory System," John H. Peck, M.D., Oakdale.
Nov. 9 "Hygiene of Reproduction," T. Frank Hersch, M.D., Cedar Rapids.
Nov. 16 "Venereal Diseases," James P. Sharon, M.D., Des Moines.

RADIO SCHEDULE

WOI—Wednesdays at 3:45 p. m.
WSUI—Tuesdays at 4:00 p. m.

Oct. 17 "The Common Cold," Leslie A. Carlson, M.D.
Oct. 24 "The Use of Drugs in the Practice of Medicine," Floyd M. Burgeson, M.D.
Oct. 31 "Facts on High and Low Blood Pressure," Clare A. Trueblood, M.D.
Nov. 7 "Pernicious Anemia," (to be announced).

CHICAGO MEDICAL SOCIETY PROGRAMS

(Concluded from page 522)

April 17, 1940—Obstetrics and Care of the New Born. 8:30 p. m., Maternal and Infant Mortality in Chicago, 1935-39.

All members of the Illinois, Wisconsin, Iowa, Indiana, Michigan and other State Medical Societies are cordially invited to attend these all day programs. A luncheon for members and guests will be arranged at or near the institution in which the clinical program is to be presented. A dinner will be held at the Chicago Woman's Club before the evening meetings. Tickets for clinics, luncheons and dinners should be secured for the October meeting before October 14, from the Chicago Medical Society, 30 North Michigan Avenue, Chicago.

The detailed program for Wednesday, October 18, is as follows:

9:00 a. m. to 1:00 p. m. Clinics at the Cook County Hospital.
1:00 p. m. Luncheon at the Professional Schools Y. M. C. A., Congress and Wood Streets.
2:00 p. m. to 4:00 p. m. Clinics at the Cook County Hospital.
6:30 p. m. Dinner at the Chicago Woman's Club.
8:30 p. m. The Treatment of Skull Fracture, Harry E. Mock.
Discussion by Loyal E. Davis, Casper Epstein, Eric Oldberg, and George W. Hall.

The program committee who has arranged this series of meetings consists of Drs. Nathan S. Davis, III, president; H. Prather Saunders, secretary; Herman L. Kretschmer, Charles H. Phifer, and Austin A. Hayden.

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—MRS. EDWARD A. HANSKE, Bellevue
President Elect—MRS. ELBERT T. WARREN, Stuart
Secretary—MRS. WALTER J. CONNELL, Dubuque
Treasurer—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

PROGRAM FOR MENTAL HYGIENE

I. HISTORY

A. Mental Hygiene as a Part of Psychiatry
   1. Psychiatric service in the community
   2. Child guidance clinics
   3. Public health work
   4. Influences on hospitalization
B. The Origin and Development of the Mental Hygiene Movement—National Committee on Mental Hygiene
C. Effects of Heredity and Environment

II. CHILDHOOD

A. Prenatal
   1. Supervision of the expectant mother by a physician
   2. Happy pleasant surroundings
   3. An understanding husband
B. Infancy—Early Training Later Leads to Efficiency and Poise
   1. Health habits
      a. Feeding
      b. Sleeping
      c. Cleanliness
   2. Peace and freedom from excessive handling
   3. Self activity
   4. Security
   5. Contentment
C. Preschool—Traits Largely Learned from Example Set by Older Associates
   1. Health habits
   2. Character and personality development
      a. Mental
      b. Moral
      c. Social
      d. Emotional
   3. Family relations
      a. Parental authority
      b. Environment and its relation to character and personality
   4. Family security
      a. Affection
      b. Happiness
   5. Attitudes toward work and play
D. School Age
   1. Health habits
   2. Character and personality development
      a. Mental
      b. Moral
      c. Social
      d. Emotional
   3. Family relations
      a. Parental authority
      b. Environment and its relation to character and personality
   4. Family security
      a. Affection
      b. Happiness
   5. Attitudes toward work and play
   6. Human relations of outside world—Community institutions
      a. School
         1.) Learning to study
         2.) Development of native ability; originality and self expression
      b. Church—Religious training
      c. Clubs
      d. Social activities
      e. Recreation facilities
         1.) Play; alone and in groups (gang spirit)
         2.) Vacations
         3.) Organizations
E. Adolescence—Respect and Needs for the Changing Personality
   1. Health habits
      a. Food
      b. Sleep
      c. Exercise
      d. Physical changes
         1.) Sex maturity; primary and secondary characteristics
         2.) Glandular disturbances
         3.) Rapid growth
   2. Re-evaluation of behavior processes
      a. Mental
      b. Moral
      c. Social
      d. Emotional
   3. Acceptance of personal responsibility
      a. Facing reality
      b. Development of security
      c. Intellectualized behavior
   4. Acceptance of social responsibility
      a. At school
      b. In the community

III. ADULT

Rules for Mental Health:

By John I. Marker, M.D., Davenport

(Used with author's permission)

Recognize that you are a physical being, an intelligent being, and a spiritual being.

A. Plan your life and stick to your plan. Change this plan as often as due consideration makes it seem advisable.
   1. Plan your day; a part for work, a part for recreation and meals, a part for relaxation and rest.
   2. Take care of your physical health by regular recreation and by a regular physical check-up once a year.
   3. Make your own estimate of the scheme of life and the part you play in it, taking mental inventory of your natural intelligence, emotional sensitiveness, and spiritual tendencies.

B. Live a life of faith:
   1. Faith in yourself
   2. Faith in mankind
   3. Faith in the future
   4. Faith in the infinite

   Worry is avoided by faith and activity. Any worry is quickly dispelled by getting a plan for meeting the problem and starting to carry it out.

C. Talk to your physician about any tendency to over-sensitiveness, prudishness, fears, inhibitions or marked likes and dislikes. Learn their source and how to get rid of them.

D. Conceive of your recreation as a pleasant time to build up resources; your work as a service to others. In the satisfaction of a service rendered lies the joy of your work.
   a. Spend at least a little less than you earn. Freedom demands of each man that he provide his own social security.
   b. Know your position in life rather than anticipate good luck or blame bad luck.

E. Always remember you are one of many; you have a privilege to form your ideas of right and wrong, but allow others an equal privilege of decision in their own lives.

QUESTIONS FOR DISCUSSION

1. Does your community plan?
2. Is it growing intellectually
3. Does your community provide adequate physical and social projects for its members?
4. Does it have a wholesome interest in the schools?
5. What is its regard over local, state and national affairs?
6. What is your mental hygiene program?
7. What does the school contribute to your mental hygiene program?

ACKNOWLEDGMENTS

Your Program Committee has received much valuable and worthwhile assistance from interested parties in connection with the mental hygiene outline of study, and we wish to take this opportunity of expressing our sincere appreciation of their efforts. Dr. John I. Marker of Davenport kindly granted us the privilege of using his Adult Mental Health Rules, and Miss Gertrude Cromwell, superintendent of health education and school nursing in the Des Moines Public Schools, supplied constructive criticisms and helpful suggestions for the outline itself. Dr. Jeannette Dean-Throckmorton of the State Medical Library, and Miss Helen Aten of the State Traveling Library, cooperated splendidly in furnishing the lists of mental hygiene books which were published on the Auxiliary page of the August Journal.

Any member or group desiring a more extensive bibliography or further sources of study may obtain additional information by writing Mrs. Russell C. Doolittle, chairman of the committee, at Twenty-eighth and Woodland, Des Moines, Iowa.

FALL BOARD MEETING

The Board of the Woman's Auxiliary to the Iowa State Medical Society met at luncheon on Friday, September 22, at the Hotel Fort Des Moines.

Mrs. Hanske in greeting the Board expressed her conviction that it was extremely desirable to enlarge the membership of the Auxiliary and develop its usefulness in all parts of the state. The reports given by the various chairmen pointed the way to definite objectives and plans for carrying them out. The educational program for the year is centering the study on mental hygiene. An outline for study is being presented to the auxiliaries with bibliographic references for additional sources, and from time to time special articles will appear on the Auxiliary page in the Journal. In concentrating on this subject the Auxiliary recognizes an important field in which it may sometime make a distinct contribution.

The Public Relations Committee is seeking to make resource and program material available to organizations interested in developing health programs. The Speakers Bureau, the Hygeia clipping bureau and copies of radio broadcasts on health were suggested as valuable sources. The Committee recognizes the opportunity of many auxiliary members who are carrying leadership responsibilities in other organizations. They are in a position to act in a liaison capacity between the medical profession and these organizations, and need to be well informed concerning public hygiene problems, the national health program and resources for program material in these fields.

The Auxiliary page in the Journal will continue to be the channel through which committees share their plans and objectives with all the members. It is earnestly hoped that it may become more of an exchange where county units share with each other what they are doing.

SOCIETY PROCEEDINGS

Black Hawk County

Sixty members of the Black Hawk County Medical Society heard William E. Adams, M.D., assistant professor of surgery in the School of Medicine of the Division of Biological Sciences, University of Chicago, speak Tuesday, September 19, on Recent Advances in Thoracic Surgery. The meeting was held at Black's Tearoom in Waterloo.

Bremer County

The combined monthly meeting of the Bremer County Medical Society and the staff of Mercy Hospital, was held Wednesday, September 27, at the Fortner Hotel in Waverly. Leo H. LaDage, M.D., of Davenport was guest speaker, and addressed the group on Plastic Procedures in General Practice.

P. K. Graening, M.D., Secretary

Cass County

Walter A. Anneberg, M.D., of Carroll, furnished the scientific program for the meeting of the Cass County Medical Society, held in Atlantic, Thursday, September 21. The meeting was preceded by a dinner at the Hotel Whitney, after which Dr. Anneberg spoke on The Treatment of Pneumonia with Sulfapyridine. Visiting physicians were in attendance from Audubon and Adair counties.

Fayette County

The Fayette County Medical Society met at the Mealy Hotel in Oelwein, Monday, September 25. Darrell L. Bell, M.D., of Oelwein, newly elected to membership at this meeting, presented an interesting talk on Pneumonia. Dr. Elizabeth Smith Kennedy of Oelwein discussed the immunization program sponsored by the State Society, and it was unanimously accepted.

H. H. Wolf, M.D., Secretary

Hardin County

The regular monthly meeting of the Hardin County Medical Society was held Tuesday, September 26, at the Winchester Hotel in Eldora. Following the six-thirty dinner, Paul C. Bucy, M.D., assistant professor of surgery, University of Chicago, spoke on Brain Tumors in Children.

W. E. Marsh, M.D., Secretary

Linn County

Temple S. Fay, M.D., professor and head of neurology and neurosurgery, Temple University, Philadelphia, was guest speaker for the Linn County Medical Society, at the meeting held Friday, September 29, at the Hotel Roosevelt in Cedar Rapids. Dr. Fay spoke on Physical and Neurological Considerations of Interest to the General Practitioner, and the paper was discussed by H. L. Van Winkle, M.D., of Cedar Rapids. Arthur D. Woods, M.D., of State Center, presented a paper on The County Medical Society as I Have Found It.

The next program of the society will be held Monday, October 30, with Lewellys F. Barker, M.D., emeritus professor of medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland, as the speaker of the occasion.

T. F. Hersch, M.D., Chairman Program Committee

Madison County Annual Meeting

The Madison County Medical Society held its annual election of officers, Monday, September 18, when members and their wives met in Winterset. Results of the election are as follows: Dr. John F. Veltman of Winterset, president; Dr. Glenn J. Anderson of Winterset, vice president; Dr. Evelyn M. Olson of Winterset, secretary and treasurer; Dr. I. K. Sayre of St. Charles, delegate; and Dr. H. N. Boden of Truro, alternate delegate. Carl F. Jordan, M.D., and E. K. Vaubel, M.D., of the State Department of Health, Des Moines, were present as guests, and Dr. Jordan presented an interesting talk on Infantile Paralysis. Seven cases of this disease diagnosed in Madison County during July and September, were reported and discussed.

Evelyn M. Olson, M.D., Secretary

Marion County

A joint meeting of the Marion, Mahaska and Monroe County Medical Societies was held in Bussey, Thursday, September 21. In addition, guests were present from Lucas, Warren, Polk, Keokuk, Wapello and Johnson counties. Following the six-thirty dinner T. A. Moran, M.D., of Melrose read a paper on A Case of Tularemia Caused by the Bite of a Wood Tick. This was discussed by Harold A. Spilman, M.D., of Ottumwa, and Carl Aschenbrenner, M.D., of Pella. Frank P. Ralston, M.D., of Knoxville, showed the State Department of Health motion picture film on the Care of the Premature Infant. Julian D. Boyd, M.D., of the State University of Iowa, College of Medicine, Iowa City, addressed the group on Therapeutic Procedures in Infancy and Childhood. E. Marsh Williams, M.D., of Oskaloosa, talked on Electrocardiography, and showed several tracings. William E. Sanders, M.D., of Des Moines, discussed the subject further and referred to the developmental history of the electrocardiograph.

J. R. Wright, M.D., Secretary

Polk County

The regular scientific meeting of the Des Moines Academy of Medicine and Polk County Medical Society was held Tuesday, September 26, at the Hotel Fort Des Moines. The program consisted of a paper by Walter D. Abbott, M.D., of Des Moines, on The Significance of Low Back Pain; and a discussion of Pleurodynia, by Lee Forrest Hill, M.D., also of Des Moines.

Poweshiek County

On Tuesday, September 26, the Poweshiek County Medical Society held an open meeting in Grinnell, at which time F. E. Schmidt, M.D., of Chicago, spoke on The Management of the Pneumonias, illustrating his address with the Lederle Laboratories film on the subject. Dr. Schmidt stressed the combined use of serum and sulfapyridine as offering the best prognosis in the majority of cases.

The next meeting of the society will be held in Montezuma, Tuesday, October 17, when the following program will be presented: Pelvic Tumors, F. E. Simeral, M.D., of Brooklyn; and Notes on Minor Surgery, C. W. Howell, M.D., of Grinnell.

C. E. Harris, M.D., Secretary

Sac County

The Sac County Medical Society met at the Park Hotel in Sac City, Thursday, September 21. Plans were laid for the coming postgraduate lectures to be held in Storm Lake and Sac City. Three new members, Dr. Fred L. Blair, Jr., of Lytton, Dr. William I. Evans of Odebolt, and Dr. H. V. Turner of Auburn, were formally inducted into the society. Dr. H. E. Farnsworth of Storm Lake, chairman of the Child Health and Protection Committee, was present to discuss the immunization program sponsored by the State Society. The scientific program for the meeting centered around Fractures and Their Management, and motion picture films, secured by the Fracture Committee of the State Society, were shown. Fred L. Knowles, M.D., of Fort Dodge, a member of the committee presided at the discussion which followed.

H. N. Neu, M.D., Secretary

Scott County

Melvin R. Guttman, M.D., assistant professor of otolaryngology, Loyola University School of Medicine, Chicago, addressed the first fall meeting of the Scott County Medical Society, Tuesday, September 5, at the Lend-A-Hand Club in Davenport. Dr. Guttman's subject was Diagnosis and Treatment of Acute Otitis Media and Complications.

P. E. Gibson, M.D., Secretary

Tama County

Members of the Tama County Medical Society assembled for a dinner meeting, Thursday, September 14, at Chelsea. After the dinner a motion picture film on the Care of the Premature Infant, furnished by the State Department of Health, was shown by F. W. Gessner, M.D., of Dysart.

Washington County

The annual turkey dinner of the Washington County Medical Society in Wellman, was held Tuesday, September 19. Special guests of the occasion included Dr. George H. Scanlon of Iowa City, Mr. Adrian Kuipers, the new editor of the Wellman *Advance*, and Dr. Robert L. Parker, State Secretary of Des Moines. The speaker of the evening was Congressman Thomas E. Martin of Iowa City.

Woodbury County

A symposium on Public Health was presented for members of the Woodbury County Medical Society at their meeting held Monday, September 25, at the Sioux City Country Club, by the following essayists: C. C. Applewhite, M.D., surgeon, United States Public Health Service, Chicago; Martin F. Haygood, M.D., C.P.H., director local health service, State Department of Health, Des Moines; and W. S. Petty, M.D., director public health Sioux City. Another featured guest on the program was W. W. Bauer, M.D., director of the Bureau of Health Education of the American Medical Association, Chicago, who spoke on The Community Looks at Public Health.

W. H. Gibbon, M.D., Secretary

Dubuque County Interprofessional Society

The fall meeting of the Dubuque County Interprofessional Society will be held in Dubuque, Wednesday, October 11, with the following program: The Importance of the Work of the Council on Pharmacy and Chemistry, Dr. Paul C. Barton, director of the Bureau of Investigation of the American Medical Association, Chicago; The Iowa Hospital Service Plan, Fredric P. G. Lattner, executive director of the Iowa Hospital Service Plan, Des Moines; and Medicolegal Aspects of Alcoholism, Harold W. Morgan, M.D., of Mason City. Officers of the society are: F. P. McNamara, M.D., president; Charles Falkenhainer, P.D., vice president; Clara M. Henchen, R.N., secretary; and J. G. Nemmers, D.D.S., treasurer.

Iowa and Illinois Central District Medical Association

The Iowa and Illinois Central District Medical Association will hold its fall meeting Wednesday, October 25, at the LeClaire Hotel in Moline, Illinois. The following program will be presented after the six-thirty dinner: Fractures of the Carpal Schaphoid, L. J. McCormick, M.D., of Moline, Illinois; Intestinal Malignancies, W. Wayne Babcock, M.D., professor of surgery and clinical surgery, Temple University School of Medicine, Philadelphia. Discussion of Dr. Babcock's paper will be opened by H. P. Miller, M.D., of Rock Island, Illinois; Merle J. Brown, M.D., of Davenport, Iowa; and C. S. Costigan, M.D., of Moline, Illinois.

James Dunn, M.D., Secretary

PERSONAL MENTION

Dr. Leonard M. Folkers who has spent the past four years in the Student Health Service at the University of Iowa, has resigned to accept a similar position in the Health Service of Michigan State College at East Lansing, Michigan. Dr. Folkers was graduated from the State University of Iowa, College of Medicine, in 1932.

Dr. Guy R. McCutchan who has practiced in Council Bluffs for the past five years, has left that city and located in Portland, Oregon, where he has accepted a position on the faculty of the University of Oregon Medical School.

Dr. Cyril J. Ryan has opened offices in Creston, where he will enter the practice of medicine and surgery. Dr. Ryan was graduated in 1937 from the State University of Iowa, College of Medicine, and interned at St. Joseph's Hospital in Tacoma, Washington.

Dr. H. E. Farnsworth of Storm Lake, addressed the Estherville Kiwanis Club, Tuesday, September 19, on "Work with Underprivileged Children."

Dr. Paul H. Beppler has announced his removal from Remsen, in which city he practiced for eight years. He will be associated with the health department of the Pullman University in Pullman, Washington.

Dr. Fred L. Knowles of Fort Dodge, presented an illustrated lecture on "Orthopedic Surgery," for members of the Clarion Rotary Club, at a meeting held in Clarion, Monday, August 28.

Dr. Burdette H. Osten, recently of Melbourne, has arrived in Northwood, where he will open offices for the practice of medicine. Dr. Osten was graduated in 1938 from the State University of Iowa, College of Medicine, Iowa City, and served a year's interneship at St. Joseph's Hospital in Fort Wayne, Indiana. He has also received special training in obstetrics at Lakeside Hospital, Cleveland, Ohio.

Dr. James V. Prouty of Cedar Rapids, addressed the Marion Lions Club, Tuesday, September 12, on "Cancer."

Dr. P. J. Leinfelder, of the State University of Iowa, College of Medicine, Iowa City, presented a paper at the Forty-fourth Annual Meeting of the American Academy of Ophthalmology and Otolaryngology, held in Chicago, October 8 to 13, 1939. Dr. Leinfelder spoke on "Retrograde Degeneration in the Optic Tracts and Nerves: An Experimental Study of Changes in the Axis Cylinders."

Dr. J. Paul Chapin has arrived in Nevada where he will assume his duties as medical superintendent of the Iowa Sanitarium. Dr. Chapin was graduated in 1931 from the College of Medical Evangelists, Loma Linda-Los Angeles, and has spent several years in Malamulo, Nyasaland, South Africa. He comes directly to Nevada from Red Key, Indiana, where he has been located since his return to the United States.

Dr. Morris Fishbein, editor of the Journal of the American Medical Association, addressed members of the Cedar Rapids Executives Club, Tuesday, September 12. He spoke on "Socialized Medicine."

Dr. Walter J. Balzer has opened offices in the Davenport Bank building in Davenport, where he will enter the practice of medicine, specializing in obstetrics and gynecology. Dr. Balzer was graduated in 1934 from the State University of Iowa, College of Medicine, Iowa City, and since that time has been connected with the Herman Kiefer Hospital in Detroit, Michigan.

Dr. Frederick C. Bendixen, after practicing sixteen years in Ireton, has left that locality, and moved to LeMars, where he will continue in the practice of medicine and surgery.

Dr. F. R. Peterson, Dr. H. Dabney Kerr, and Dr. N. G. Alcock, all of the State University of Iowa, College of Medicine Faculty, will appear as guest speakers at a joint meeting of three Illinois county medical societies, Knox, Warren and Henry, which will be held Thursday, October 19, at Kewanee, Illinois. Dr. Peterson will discuss "Malignancies of the Large Bowel and Rectum"; Dr. Kerr will present his own technic for "X-Ray Treatment of Malignancies"; and Dr. Alcock will speak on "The Value of Urologic Findings in the Diagnosis of Abdominal Tumors."

MARRIAGES

Mrs. Gladys B. Hiatt of Toledo, Iowa, and Dr. F. J. Graber of Stockport, were married Saturday, September 2, at Toledo. After a short trip through northern Iowa, Illinois and Wisconsin, they will return to Stockport, where Dr. Graber has been practicing for many years.

The marriage of Miss Bertine Hooper of Hartford, Iowa, and Dr. S. F. Yugend of Sigourney, took place Friday, September 8, in Oskaloosa. Dr. Yugend was graduated in 1937 from the University of Minnesota Medical School, and served his interneship at Broadlawns General Hospital in Des Moines. The couple will make their home in Sigourney, where Dr. Yugend has just entered the practice of medicine.

On Friday, August 18, the wedding of Miss Helen Christenson of Royal and Dr. Ellis K. Vaubel of Dysart, took place at the Lutheran Church in Royal.

They will be at home in Des Moines, where Dr. Vaubel has recently become associated with the State Department of Health. He was graduated in 1938 from the State University of Iowa, College of Medicine, and has completed one year's interneship at the Methodist Hospital in Indianapolis, Indiana.

Mr. and Mrs. Charles Steele of Fairfield, announce the marriage of their daughter, Maxine, to Dr. Ludwig Gittler, also of Fairfield, which took place Saturday, September 9, at the Methodist parsonage in Davenport. Dr. and Mrs. Gittler will be at home in Fairfield after November first where Dr. Gittler has been practicing for the past eight years.

Miss Ruby Lenore Thompson of Thief River Falls, Minnesota, and Dr. Andrew V. Grinley of Rockwell City, were married Wednesday, August 23, at the home of the bride's parents. After a short wedding trip, they will return to Rockwell City, where Dr. Grinley has been associated with Dr. W. W. Stevenson for the past three months.

The marriage of Miss Adele Barr Buesch and Dr. R. J. Galvin, both of Oelwein, took place Monday, September 18, at the Sacred Heart Rectory in Oelwein. They left immediately for a trip through the eastern states, and will return to Oelwein, where Dr. Galvin has practiced for several years.

DEATH NOTICES

Chilgren, Gustave Arthur, of Burlington, aged seventy-three, died September 17 after a heart attack. He was graduated in 1892 from the University of Minnesota Medical School, Minneapolis, and at the time of his death was a member of the Des Moines County Medical Society.

Dorsey, Frank Blinn, Jr., of Keokuk, aged fifty, died suddenly September 1 after a heart attack. He was graduated in 1912 from the State University of Iowa, College of Medicine, Iowa City, and at the time of his death was a member of the Lee County Medical Society.

Dun Van, Edgar Kirkland, of Chelsea, aged sixty-seven, died September 24 in a Cedar Rapids hospital after a heart attack. He was graduated in 1897 from the State University of Iowa, College of Homeopathic Medicine, Iowa City, and at the time of his death was a member of the Tama County Medical Society.

Jacobsen, Robert Andrew, of Exira, aged sixty, died September 6, at South Haven, Michigan, after an extended illness. He was graduated in 1894 from the State University of Iowa, College of Homeopathic Medicine, Iowa City, and at the time of his death was a member of the Audubon County Medical Society.

McKitterick, Nathaniel M., of Burlington, aged eighty-one, died August 29, after a heart attack. He was graduated in 1880 from Rush Medical College, University of Chicago, and had long been a member of the Des Moines County Medical Society.

Rolfs, John August, of Aplington, aged seventy-two, died August 29, of coronary occlusion. He was graduated in 1904 from Drake University College of Medicine, Des Moines, and had long been a member of the Butler County Medical Society.

Whalen, Richard H., of Tama, aged sixty-five, died suddenly September 4 of coronary thrombosis. He was graduated in 1905 from the Hahnemann Medical College and Hospital, Chicago, and at the time of his death was a member of the Tama County Medical Society.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of the Fracture Committee
September 9, 1939

The Fracture Committee of the Iowa State Medical Society met at Mercy Hospital in Des Moines Saturday noon, September 9, with the following members present: D. C. Conzett, F. L. Knowles, Arch F. O'Donoghue, D. N. Gibson, and W. E. Wolcott. The Committee considered plans for the statewide fracture clinic, and decided to hold it at the Hotel Fort Des Moines in Des Moines November 8, and to have state physicians conduct the morning program, with out-of-state speakers in the afternoon. Committees were appointed to take charge of the two sections of the program. The Committee next considered making films on fractures, but decided to review some of the films already available and purchase those which the members felt would be valuable for showing before county medical societies. A committee was appointed to procure and review films before the clinic November 8. Further discussion centered on the exhibit of the Committee at the state meeting, the utilization of the films in the Committee's library and the gas bacillus questionnaire.

Meeting of the Board of Trustees
September 27, 1939

The Board of Trustees of the Iowa State Medical Society met in the central office in Des Moines, Wednesday, September 27, at 9:30 a. m. Those present were the three trustees, O. J. Fay, J. I. Marker, L. R. Woodward; and the editor, Lee F. Hill. Bids for printing the Journal for 1940 were considered, but none was accepted and the matter was tabled until the next meeting of the Board. Dr. Dennis H. Kelly was named associate editor of the Journal, effective at once. Dr. Hill requested that Miss Stewart represent him at the Secretaries' and Editors' Conference in Chicago on November 17 and 18; and the Board approved this, also authorizing the attendance of Miss McCord at the same meeting. A request of the Fracture Committee for $250.00 for purchasing additional films on fractures, was approved.

HISTORY OF MEDICINE IN IOWA

Edited by the Historical Committee

DR. FRANK M. FULLER, Keokuk
DR. JOHN T. McCLINTOCK, Iowa City
DR. R. T. LENAGHAN, Clinton
DR. TOM B. THROCKMORTON, Des Moines
DR. WALTER L. BIERRING, Des Moines
DR. WILLIAM JEPSON, Sioux City

Annual Announcement of the Iowa Medical College Keokuk, Iowa, Session of 1855-56

This rare addition to the State Medical Library came with a letter to the Librarian, Dr. Throckmorton, June 26, 1939, from a bibliophile friend, Dr. Samuel X. Radbill, of Philadelphia, who had found the same in "a junk shop, along with a batch of similar announcements, and reprints."

The historical records of the Iowa Medical College are very incomplete and somewhat inaccurate. The American Medical Association Directory of 1938 states that "The Iowa Medical College, Keokuk, Iowa, was organized in 1858; extinct in 1860." A similar statement was made in Polk's Medical and Surgical Directory of 1886, with the further notation: "As no list of the diplomas granted in this College could be obtained, all the names of physicians appearing in the following pages, and represented as being its graduates, have not been verified."

The announcement sent to Dr. Throckmorton is for the session of 1855-56, which was evidently the first year of this College. In Dr. David S. Fairchild's *History of Medicine in Iowa,* no mention is made of the Iowa Medical College. The *Iowa Medical Journal* of May 15, 1909, contains an article by Dr. George F. Jenkins, on the "History of Keokuk Medical Colleges" without any reference to this College. Dr. Ferdinand J. Smith published an interesting monograph in 1936, on the Transition from Franklin Medical Schools to Keokuk Medical Colleges, and this article likewise does not mention the Iowa Medical College.

It will be recalled that the College of Physicians and Surgeons of the Upper Mississippi held its last session in 1849-50, in Davenport, Iowa, after which it was moved to Keokuk, Iowa, and become known as the Medical Department of the State University of Iowa. The Dean and Professor of Surgery of the first Medical Faculty was Dr. John F. Sanford. He is always referred to as one of the most gifted medical men of his period; the founder of the Iowa State Medical Society and the editor of the *Western Medical and Chirurgical Journal,* the first medical journal published in Iowa, in September, 1850.

Dr. Sanford is listed as the Dean of the School in the announcements for the first three sessions, but in 1853 he was succeeded as Dean and Professor of Surgery by Dr. J. C. Hughes, who continued to fill these positions until his death in 1881. From correspondence and other records it is evident that these changes were due to personal differences which had developed between Dr. Sanford and Dr. Hughes. This is borne out by a report of Dr. J. C. Hughes as Dean of the Faculty of the Medical Department of the Iowa State University to the State Superintendent of Public Instruction, November 30, 1854, in which very disparaging remarks are made about his predecessor with regard to his conduct as Dean and a member of the Medical Faculty.

The *Western Medical and Chirurgical Journal,* of which Dr. Sanford was editor, was discontinued in 1853, and in August of that year the first number of the *Iowa Medical Journal* was issued under the editorship of the Medical Faculty. It seems, therefore, quite likely that the Iowa Medical College was established as a rival institution to the Medical Department of the State University.

There is no available record of the life span of this new college, and if further annual announcements were published, they have not come to light. The careful manner in which the announcement is prepared suggests the scholarly touch of Dr. Sanford. The Board of Trustees includes distinguished names of that period and among the curators the following are noted:

Hon. J. D. Eads, Superintendent of Public Instruction and President Board of Trustees, of Iowa University.

Hon. George Wright, Chief Justice of the Supreme Court.

Hon. A. Hall, member of Congress.

Hon. George W. McCleary, Secretary of State.

Hon. J. C. Knapp, U. S. District Attorney.

Hon. James Harlan, U. S. Senator.

The above would indicate that the new school had some influential sponsors. Included as members of the Faculty of Medicine of the Iowa Medical College, are the following:

THE FACULTY OF MEDICINE

Professor of General, Special and Surgical Anatomy: Sanford Bell, M.D.

Professor of Principles and Practice of Surgery and Clinical Surgery: J. F. Sanford, M.D.

Professor of Pathology and Clinical Medicine: E. C. Francis, M.D.

Professor of Theory and Practice of Medicine: J. D. Elbert, M.D.

Professor of Obstetrics and Diseases of Women and Children: R. Hills, M.D.

Professor of Materia Medica and Therapeutics: J. Lawrence Page, M.D.

Professor of Physiology and Hygiene: T. Gordon Hake, M.D.

Lecturer on Chemistry and Toxicology: J. S. Martin, M.D.

Lecturer on Medical Jurisprudence: Lloyd D. Simpson, Esq.

Demonstrator of Anatomy: B. F. Stephenson, M.D.

Dean of the Faculty: Sanford Bell, M.D.

It seems fitting to reprint in full the opening announcement, since it is expressive of the high standards of medical teaching toward which this new school was attempting to approximate:

"The Board of Trustees and Faculty of the Iowa Medical College, take pleasure in announcing to the medical profession and the public, that the regular Session of this Institution will open in this city, on the first Monday in November next. The Trustees, clothed with the most ample legal powers, have completed the organization of the Medical Faculty, in a manner which cannot fail to satisfy the true friends of Medical Education throughout the country, and the plan of instruction, is for the first time in this State, arrayed in such a manner as to fully realize the ideas and recommendations of the American Medical Association. It is well known, that this body, composed of medical men from every portion of our widely extended country, has been for several years, laboring to elevate and improve the medical literature of the United States. In some respects, their labors have accomplished the desired object; but in the most important particular, a reform in medical teaching, much yet remains to be done.

"It is designed to make the Iowa Medical College an instrumentality in improving the state of Medical Education in the West, and to place it upon such a footing, as to command the respect of the profession at home, and make it a creditable representative of our medical literature abroad.

"No one doubts the need of such an institution in Iowa, and the extended, we may say, almost universal, sanction of the profession in this portion of the West affords a sure foundation for a brilliant future and inevitable success. In view of this certain prospect, every facility has been accumulated. It is confidently asserted, that the most extensive and perfect means of illustrating the several courses of instruction are provided, and every essential opportunity afforded for a thorough prosecution of medical studies. The finest and most commodious lecture rooms in the state are being fitted up and the arrangements of the College building, with reference to anatomical pursuits, is unsurpassed. Viewing this department as the legitimate basis of Medical Science, the Faculty have been especially careful to make the most ample provisions for its satisfactory demonstration.

"The department of Clinical Medicine will receive the especial attention of a clinical teacher, who will exhibit to the classes, a great number of interesting cases, with such practical instruction as will serve to qualify the student for the important responsibilities of the sick room. It is believed that extended opportunities of this kind, together with a system of instruction, requiring each student to observe cases, keep a record of the observed phenomena, announce his diagnosis and the grounds upon which it is based, indicate the course of treatment, which a rational consideration of the known pathology of the disease would render applicable, and finally to analyze a number of cases whether perceived by himself, or recorded by trustworthy observers, will supply, to a great extent, the necessary desideratum in teaching practical medicine."

The General Synopsis of Lectures and Courses is more complete and descriptive than is noted in announcements of other medical schools of that early period. With all this foreword and high purpose, the time requirement for graduation was limited to one short academic year, November to March, plus the writing of an acceptable thesis and the passing of a satisfactory final examination. Considering the advanced ideals and purposes evident in the minds of the original promoters of the Iowa Medical College of ninety years ago it is to be regretted that more complete records are not available as to its subsequent activities, or final discontinuance. W. L. B.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

PRINCIPLES AND PRACTICE OF OPHTHALMIC SURGERY—By Edmund B. Spaeth, M.D., associate professor of ophthalmology in the Graduate School of Medicine, University of Pennsylvania. Lea and Febiger, Philadelphia, 1939. Price, $10.00.

GONORRHEA IN THE MALE AND FEMALE—By P. S. Pelouze, M.D., assistant professor of urology, University of Pennsylvania. Third edition, thoroughly revised. W. B. Saunders Company, Philadelphia and London, 1939. Price, $6.00.

THE VAGINAL DIAPHRAGM—By Le Mon Clark, M.D., Chicago. Illustrated. The C. V. Mosby Company, St. Louis, 1939. Price, $2.00.

WHAT IT MEANS TO BE A DOCTOR—By Dwight Anderson. Published by the Public Relations Bureau, Medical Society of the State of New York, 2 East 103rd Street, New York, N. Y., 1939. Price, $1.00.

MENSTRUAL DISORDERS, PATHOLOGY, DIAGNOSIS AND TREATMENT—By C. Frederic Fluhmann, M.D., associate professor of obstetrics and gynecology, Stanford University School of Medicine, San Francisco, California. W. B. Saunders Company, Philadelphia and London, 1939. Price, $5.00.

THE GENUINE WORKS OF HIPPOCRATES—Translated from the Greek by Francis Adams, LL.D., Surgeon. The Williams and Wilkins Company, Baltimore, Maryland, 1939. Price, $3.00.

A TEXTBOOK OF CLINICAL NEUROLOGY—By Israel S. Wechsler, M.D., professor of clinical neurology, Columbia University, New York. Fourth edition, revised. W. B. Saunders Company, Philadelphia and London, 1939. Price, $7.00.

CLINICAL PATHOLOGICAL GYNECOLOGY—By J. Thornwell Witherspoon, M.D., formerly associate professor of experimental and pathological gynecology, Indiana University Medical Center. Lea and Febiger, Philadelphia, 1939. Price, $6.50.

LIFE AND LETTERS OF DR. WILLIAM BEAUMONT—By Jesse S. Myer, M.D., late associate in medicine, Washington University, St. Louis. The C. V. Mosby Company, St. Louis, 1939. Price, $5.00.

CANCER HANDBOOK OF THE TUMOR CLINIC, Stanford University School of Medicine. Edited by Eric Liljencrantz, M.D., chief of the Tumor Clinic. Stanford University Press, Stanford University, California, 1939. Price, $3.00.

HEALTH OFFICERS' MANUAL—By J. C. Geiger, M.D., Dr. P.H., director of the Department of Public Health, City and County of San Francisco, California. W. B. Saunders Company, Philadelphia and London, 1939. Price, $1.50.

PERSONAL AND COMMUNITY HEALTH—By C. E. Turner, A.M., Dr. P.H., professor of biology and public health, Massachusetts Institute of Technology. Fifth edition. The C. V. Mosby Company, St. Louis, 1939. Price, $3.00.

BOOK REVIEWS

DISEASES OF THE NOSE AND THROAT

By Charles J. Imperatori, M.D., professor of otolaryngology, New York Polyclinic Medical School and Hospital; and Herman J. Burman, M.D., adjunct professor of otolaryngology, New York Polyclinic Medical School and Hospital. Second edition, revised. J. B. Lippincott Company, Philadelphia, 1939.

This second edition of a book published only three years ago is eloquent testimony not only to its popularity but to the determination of its authors to keep abreast of the steady progress being made in the field of rhinolaryngology. The text is essentially the course given their postgraduate students, and the writers have endeavored to answer the question, "What is the diagnosis of this condition and how shall I treat it?" This has been thoroughly accomplished.

The outline form in which the volume is written makes it easy to obtain a fund of information in a comparatively short time. Symptoms, diagnosis and treatment are considered first. These sections are followed by a discussion of the pathology and causation of the disease. Office procedure and treatment technic are taken up in detail. The section on the nose includes a discussion of dermoid cysts, telangiectasia, injuries, cytology of nasal secretions, fractures of the nasal sinuses, transantral and external radical ethmoidectomy. The chapter on orbital infections as a complication of sinusitis has been completely re-written.

The additions to the diseases of the oral cavity include more extensive discussions of agranulocytosis, perlèche, acute septic sore throat, dermoid cysts, adamantinoma, burning tongue, chronic inflammations of the salivary glands, ptyalism and xerostomia. Many changes have been made in the chapters on tuberculosis of the larynx, laryngectomy and lung abscess. The sections on allergic conditions, physical therapy, general diseases in the nose and throat, and laboratory aids have been especially well treated.

The many original illustrations and fine plates make this outstanding work a valuable addition to the library of the student, the general practitioner, and the specialist. R.R.S.

LIFE AND LETTERS OF DR. WILLIAM BEAUMONT

By Jesse S. Myer, M.D., late associate in medicine, Washington University, St. Louis. With an introduction by Sir William Osler. The C. V. Mosby Company, St. Louis, 1939. Price, $5.00.

This is the romantic story of a Connecticut farmer boy who studied as a medical apprentice to a physician in a village in Vermont. He became an army surgeon and the studies of one of his patients, Alexis St. Martin, grant him the privilege of being called the first great American physiologist. This biography of Beaumont depicts a man who was greater than his work, a man whose character and ideals reflect the quality of the New England stock from whence he came.

At Mackinac, at Green Bay and at Prairie du Chien, in obscure army posts, without the facilities of any laboratory, Beaumont studied the function of the

stomach of the unfortunate Alexis. In his own words, "I had opportunities for the examination of the interior of the stomach." . . . "I have availed myself of the opportunity afforded." . . . "I consider myself but a humble inquirer after truth—a simple experimenter." . . . "My opinions may be doubted, denied or approved; . . . but their worth will be best determined by the foundation on which they rest—the incontrovertible facts."

This is the life story of a pioneer, a man imbued with a true scientific spirit, whose keen powers of observation and whose integrity and scientific honesty make him an inspiration and an example to all medical men. To those unacquainted with the story of William Beaumont and Alexis St. Martin, and to all those interested in biography, this well edited book is highly recommended. D.K.

PRIESTS OF LUCINA: THE STORY OF OBSTETRICS

By Palmer Findley, M.D., Omaha, Nebraska. Little, Brown and Company, Boston, 1939. Price $5.00.

Doctor Findley, the well-known obstetrician and gynecologist, whose "Story of Childbirth" was so well received some few years since, has followed his bent for the historic, and has given the profession "The Story of Obstetrics." The author has adopted the form of the biographic encyclopedia to present sketches of those physicians and midwives who, in his opinion, have contributed most to the growth of obstetric thought and practice, and has followed this presentation with a running account of the progress through the ages of the several of the more important developments in scientific midwifery. In general the selection of material has been excellent and the choice of historic figures good, although one misses certain names such as Bandl, Bumm, Breus and Kolisko, which are better known than some of those chosen for inclusion. American investigators have received proportionate representation and it is gratifying to find several pages devoted to an account of the life and work of J. Whitridge Williams, the only contemporary to be included.

The method of presentation makes ready reference possible through an adequate index, but also leads to considerable repetition and reiteration which renders consecutive reading difficult and makes the reader conscious of a lack of fluidity in the author's style. The inclusion of numerous quotations serves partly to break the monotony, but the absence of references will make verification impossible even for the serious student. One gathers the impression that little of the book represents consultation with original sources of information, but this does not detract from the value of the compilation, which presents selected material in concise and readable form.

The volume will form a valuable addition to the library of any physician interested in the history of medicine and particularly to those practicing obstetrics. It especially and adequately emphasizes man's long struggle to learn something of human reproduction and his unending search for means to alleviate the perils of childbearing. Even reading the long list of those eminent individuals who have given all or most of their lives toward bringing obstetric knowledge to its present state of imperfection makes the reader appreciate the magnitude of the task still awaiting the investigators of the future. The ages have slowly expanded the confines of our knowledge and the last century has been particularly fruitful under the impetus of the methods of scientific experimentation; but how long will it be before unnecessary deaths from infection, toxemia, hemorrhage, and other complications will be reduced to that irreducible minimum which has become the aim of the physician interested in prolonging life for the good of humanity? Doctor Findley does not indulge intentionally in prophecy but seems unconsciously prophetic by pointing out the slow development of our present inadequate knowledge. The future will surely develop, as the present may now be producing, more benefactors for childbearing women than the past has sired. The great work is still to be done.

E.D.P.

VARICOSE VEINS

By Alton Ochsner, M.D., William Henderson professor of surgery and director of the department of surgery, School of Medicine, Tulane University; and Howard Mahorner, M.D., assistant professor of surgery, School of Medicine, Tulane University. The C. V. Mosby Company, St. Louis, 1939. Price $3.00.

This reviewer makes no reservations when he designates this book as one of the finest ever written on this subject. It is concise, yet complete, the bibliography quoted being most extensive. The history of treatment is well covered in the first chapter. Succeeding chapters deal with anatomy, pathology, physiology, examination and treatment.

The general attitude of the book is conservative. For instance, the authors do not approve of the treatment of varicose veins during pregnancy, a procedure which has some advocates. Neither do they perform saphenous ligation in the presence of ulcer. Such an attitude is sound teaching for safe practice. The comparative tourniquet test first described by Ochsner and Mahorner is a new method which deserves special notice. By its use the optimum site for saphenous ligation may be determined. In certain cases ligation should be done in the lower thigh as well as at the sapheno-femoral junction.

The inclusion of one fatality in the series of 269 ligation cases, a death which occurred after the book went to press, deserves comment. Such an inclusion gives the reader unreserved confidence in the scientific and professional integrity of the authors.

J.M.B.

THE NEW INTERNATIONAL CLINICS

Volume II, New Series Two. Edited by George M. Piersol, M.D., professor of medicine, graduate School of Medicine, University of Pennsylvania. J. B. Lippincott Company, Philadelphia, 1939.

This volume of the New International Clinics compares favorably with the previous volumes of this excellent series. The content comprises seventeen original contributions, six clinics, and a review of peroral endoscopy by Louis H. Clerf.

Musser of New Orleans presents an interesting discussion of pellagra from an experience of twelve hundred cases admitted to the Charity Hospital from 1925 to 1937. The value of nicotinic acid in the treatment is emphasized. Wilder is the author of an excellent paper on diabetic arteriosclerosis, in which he contends that arteriosclerosis occurs with no greater frequency and no greater intensity in diabetic patients than in other groups of individuals. Duncan of Philadelphia outlines the exact procedure to be employed in the treatment of diabetes during acute infections and surgical complications. Wintrobe presents an extremely practical article on the choice of methods for the correction of anemia in which any therapy depends on whether the anemia is macrocytic or microcytic in character.

Each contribution to this volume is of an extremely high caliber and of practical value to every practicing physician. The diligent student of the Clinics will keep abreast of modern methods in medicine. D.K.

LABORATORY MANUAL OF THE MASSACHUSETTS GENERAL HOSPITAL

By Francis T. Hunter, M.D., associate physician and clinical pathologist, Massachusetts General Hospital, Boston, Massachusetts. Third edition. Lea and Febiger, Philadelphia, 1939. Price $1.75.

This pocket-sized manual was originally intended by the author as an outline of laboratory procedures for use by the internes in the Massachusetts General Hospital. The volume contains an accurate description of methods for examining urine, feces, blood, sputum, gastro-intestinal and duodenal contents, cavity and joint fluids, cerebral spinal fluid, etc. Each of the methods is accurately described and the sources of error in each method are mentioned.

A separate chapter is devoted to the proper collection of specimens, such as urine, feces, blood, etc., for analyses. Additional chapters describe special diagnostic procedures, such as the van den Bergh reaction, the Takata-Ara test, and the glucose tolerance test; details of certain diagnostic and therapeutic procedures, such as the Schick, Dick, and tuberculin reactions, the technic for blood transfusion, the administration of therapeutic serums, subcutaneous and intravenous injections, as well as ordinary methods of vaccination and immunization against a few of the more common diseases.

The subject matter covered includes all procedures with which an interne in any hospital might be expected to be familiar and the book is therefore of value to internes everywhere and to physicians who are performing laboratory work in their own offices. Since only one method of analysis is given for any one constituent of a specimen, the procedures may not in every case conform strictly to the routine employed in every hospital, but with a minimal amount of change this manual can be made an appropriate guide.

Interpretation of the results of analyses are left to larger textbooks on the various subjects, the entire emphasis being directed toward the performance of the procedures. J.E.K.

HEART PATIENTS, THEIR STUDY AND CARE

By S. Calvin Smith, M.D., formerly special heart examiner for the Surgeon General's Office. Lea and Febiger, Philadelphia, 1939. Price $2.00.

This little work is an epitome of the various and abnormal conditions which provoke symptoms referred to as "heart disease." The classifications and descriptions of heart derangements should prove valuable to the busy physician.

The author stresses the importance of studying the patient. He places emphasis on habits of rest, exercise, sex, food intake, and the use of tobacco and alcohol. He outlines briefly the methods of physical examination. As is so often the case, the notes on treatment, both adjuvant and medicinal, are very limited. The chapters on angina pectoris and coronary artery defects and occlusion are particularly interesting in this day when all physicians recognize an increasing number of these cases. R.E.P.

CARDIOVASCULAR DISEASES

By David Scherf, M.D., associate professor of clinical medicine; and Linn J. Boyd, M.D., professor of medicine, New York Medical College. The C. V. Mosby Company, St. Louis, 1939. Price $6.25.

In this book there are assembled the necessary facts regarding cardiovascular diseases and their treatment.

The authors state in the preface that it is written as a small volume, answering questions which the student and practitioner encounter in everyday work dealing with the sick patient from the cardio-vascular aspect. The volume may be described as four hundred and thirty-one pages of easily readable material with very practical use. Included in the book is a chapter on the heart in surgery and pregnancy. Of special information is the dissertation on pulmonary embolism. E.B.W.

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BACILLARY DYSENTERY*

WILLIAM H. HOLMES, M.D.,
Chicago

And it came to pass, that the father of Publius lay sick of a fever and of a bloody flux: to whom Paul entered in, and prayed, and laid his hands on him, and healed him.—Acts 28:8.

The word flux used in the biblical quotation, means an excessive flow or discharge. It is occasionally used as a synonym for the menstrual flow, but when qualified by the word bloody it always refers to a blood-tinged diarrheal discharge. Used in this sense it is synonymous with the word dysentery. The word dysentery is often incorrectly used to describe an ordinary diarrhea. It should be used, however, only in the sense for which it was originally employed, to indicate the frequent painful passage of loose stools containing blood and mucus.

The father of Publius, therefore, had some form of dysentery. Despite the great variety of causes for dysentery, it is even possible to say that he had bacillary dysentery, and not amebic, bilharzial, or flagellate dysentery. The patient must have been quite ill; he was bedfast; he had a fever; it was thought necessary to invoke the aid of Paul, who had just made a profound impression by his nonchalance when bitten by a viper. Treatment by prayer was instituted and the patient recovered. That tells the story. Bacillary dysentery is the only dysentery with a self-limited course. Prayer or the laying on of the hands will not cure dysentery of any type, but it may appear to cure a self-limited form. Certainly the patient did not have ulcerative colitis which, in the present state of our knowledge, may be due to infection by cocci. This non-epidemic form of dysentery clinically resembles both amebic and bacillary dysentery, but it is chronic and progressive, and has a very high mortality rate. The diarrhea of sprue is sometimes referred to as sprue dysentery; but this terminology is incorrect since sprue is neither an infection nor an infestation, and the stools never contain blood.

It appears, therefore, that the father of Publius had bacillary dysentery, which means that someone else in his vicinity must have had the disease before he did. Monkeys, dogs and rabbits are susceptible to experimental infection, but the organisms of dysentery are naturally human pathogens. The disease, like typhoid and paratyphoid fever, cholera, and amebiasis, is spread from person to person; it is acquired from no other source. Paul, Roman citizen and first Christian missionary, must have seen many of the diseases with which we are acquainted today. This contact of his with bacillary dysentery occurred on the island of Malta, the home of undulant fever, about the year 62 A.D. Dysentery, however, had been described 500 years before the time of Paul, and had been differentiated from chronic diarrhea, cholera, and lientery.

The description by Hippocrates is not the first reference to dysentery. It is mentioned by Herodotus, who tells how Xerxes I, King of the Persians, on the third expedition against the Greeks, was forced to retreat because plague and dysentery seized his army and destroyed it. With the exceptions of plague and typhus there is no disease of man to which reference is so frequently made by the ancient writers as dysentery. It was widely spread over the earth's surface at the very beginning of recorded history and today, wherever men are found, there dysentery will be in the midst of them. Among troops in barracks and cantonments it is serious; but among troops engaged in actual warfare it may be as devastating as typhoid fever. Under conditions of war it is usually impossible to enforce all sanitary regulations; it is then that bacillary dysentery breaks out in epidemic form, particularly in units composed of new recruits. During the American Civil War there were 1,739,135 recorded cases of acute and chronic diarrhea and dysentery with 44,558 deaths among the Federal soldiers. Among

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the Confederates dysentery was a still greater scourge. In the military prisons the morbidity rate was frightful. No prisoner escaped infection. At Andersonville, among 16,772 cases of diarrhea and dysentery, there were 4,529 deaths. During the World War it was one of the most serious causes of disability affecting the combatants of all nations.

On the basis of these facts we may conclude that susceptibility to infection by the organisms of bacillary dysentery is universal; that young people are more susceptible than elderly people, among whom there is an appreciable degree of immunity conferred by previous attacks; that the disease is world-wide in distribution; that sporadic and chronic cases perpetuate existence of the disease; and that epidemics originate when a large number of persons are massed under such conditions that sanitary regulations either are not or cannot be enforced. Dysentery is endemic in tropical and semi-tropical countries which possess humid climates. In the temperate zone it is a disease of summer and fall. Prior to the American Civil War, dysentery was regarded as a form of malaria. Before that, as with typhoid fever, its seasonal prevalence was blamed on atmospheric changes, putrid emanations from decomposing organic matter, exposure to cold following exposure to heat, faulty diets that induced scurvy, a putrid state of the blood, and various other causes. The dysentery belt corresponds closely to the malaria belt, but is wider, extending greater distances from the equator into climates where malaria does not occur. Above the 40th parallel it occurs sporadically, but rarely in the epidemic form. Epidemics, when they do appear are restricted and of short duration. The onset of frost always brings an end to epidemic dysentery. The reasons for the increased incidence of dysentery during the summer months and the sudden termination of epidemics with the appearance of the first frost are now well known.

Warm weather favors survival of dysentery bacilli in the discharges of patients; warm weather favors the breeding of flies; and flies, it must be noted, are the main disseminators of the disease. It has been shown that dysentery and infantile diarrhea follow in about ten days when climatic and other conditions are favorable to the rapid development of flies. It is obvious that this sequence can occur only where the disposal of human excreta is faulty. Flies transmit the germ mechanically and may harbor it as long as twenty-four hours. The first severe frost paralyzes the flies, and epidemics of dysentery come to an end. Thereafter, and until flies again become active, only sporadic cases occur as the result of contamination of food by human carriers. The disease would disappear if it were not for the fact that the organism is carried over from winter to spring in the human intestinal tract. It is interesting to note that the rôle of flies in the transmission of dysentery, although not proved until before and during the World War, was suspected long ago. Sir John Pringle commented on the relationship as follows: "And there is an old observation, that such seasons as produced most flies, cater-pillars, and other insects (whose increase depends so much on heat and moisture, and consequently on corruption) have likewise been most productive of the dysentery." He further noted the possibility of contact infection and the infectiousness of dysenteric stools, stating: "In camp, the contagion passes from one who is ill, to his companions in the same tent, and from thence perhaps to the next. The foul straw becomes infectious. But the greater source of infection seems to be the privies, after they have received the dysenteric excrements of those who first fall ill. The hospitals likewise spread it: for those who are admitted with the flux, not only give it to the rest of the patients, but to the nurses and other attendants on the sick." Today, in asylums and jails, the same thing occurs. In institutions of this type dysentery is more or less endemic with periodic exacerbations. It should not be assumed, however, that asylum dysentery in epidemic form is always bacillary. In 1909 an epidemic of amebic dysentery in association with pellagra occurred in one of the asylums of Illinois. Unlike typhoid fever, dysentery is rarely transmitted through the medium of water, although it is occasionally transmitted by milk. Dysentery, therefore, is an infectious disease transmitted by flies, by dust, or by contact. It is not the result of exposure of the body to heat or cold, nor is it due to sudden fluctuations in temperature. Hence the yards of flannel worn as a belly-band by the French poilu to ward off enteric disease are about as potent a talisman as the rabbit's foot.

Dysentery spares veterans and strikes down new recruits, not because the veterans wear belly-bands, but because they are immune to dysentery by reason of one or more previous attacks, or because the organisms are unable to survive the bacteriolytic action of gastric juice. All persons who have not had the disease are susceptible. Naturally the greatest incidence is in childhood. Bacillary dysentery is responsible for about 60 per cent of the morbidity of infants classified in that diagnostic hodge-podge known in Japan as Ekiri and in this country as summer complaint, infantile diarrhea

or cholera infantum.* Since dysentery is endemic in tropical and subtropical countries, most native adults acquire some immunity. Carriers, however, are common and, as a result, residents of the temperate zone who have never had the disease, acquire it soon after their arrival in a warm country where flies abound and sanitation is archaic. It is now generally accepted that an attack of dysentery gives rise to a durable immunity against reinfection by the same strain of organisms, but not to related although antigenically different strains. Immunity to any infectious disease is never absolute. Long ago it was noted that epidemics of dysentery died out spontaneously and recurred after a period of years (twenty) long enough to produce a new group of susceptible individuals. During an epidemic the morbidity rate increases and then decreases, while the mortality rate shows a progressive decline from the beginning to the end of the epidemic. The least resistant die first, gradually a balance is attained, and the epidemic comes to an end as the number of susceptible persons decreases, just as a fire dies down unless replenished from time to time with fresh fuel. The survivors, however, are still susceptible to infection by other strains of the dysentery bacillus, of which there is a large number.

In the early articles reference is always made to *the* flux, *the* dysentery. There was a belief in several types of diarrhea, but there was no suspicion that there was more than one form of dysentery. It was only sixty-four years ago, in 1875, that the most important of the protozoan forms of dysentery was identified. In that year, F. Lösch, an assistant in the clinic of Professor E. Eichwald in St. Petersburg, discovered the parasite which was later named Entamoeba histolytica by Fritz Schaudinn. Lösch described two parasites with one of which he was able to infect dogs. Koch and Kartulis, working in Egypt, confirmed the discovery of Lösch and made a distinction between endemic dysentery due to Entamoeba hystolytica and epidemic dysentery due to bacteria.† Discovery of the organism of bacillary dysentery, however, was not reported until 1898, when Kiyoshi Shiga, a pupil of Kitasato's, reported the results of his study of an epidemic that occurred in Japan in 1896, causing 20,000 deaths out of 90,000 cases. Shiga isolated several organisms from the dejecta and bowel wall. Using the recently discovered agglutination test, he found that one of the organisms was clumped by the blood serum of dysenteric patients. This was a nonmotile, gram-negative, non-lactose-fermenting, and non-gelatin-liquefying bacillus, non-pathogenic for animals when given in food but, fatal when injected parenterally. That this organism, now known variously as Bacterium dysenteriae, Bacillus dysenteriae or as Shigella dysenteriae, is the direct etiologic agent of dysentery, is proved by the following facts:

1. It is found in almost pure cultures in the stools of patients with acute cases of dysentery.
2. It is not found in the stools of healthy persons or of patients with non-dysenteric bowel diseases.
3. It is agglutinated by the serum of dysenteric patients and by the serum of convalescent cases, but not by the serum of normal persons.
4. Accidental and intentional ingestion of pure cultures has resulted in development of typical dysentery.
5. The intravenous injection of killed cultures in rabbits gives rise to lesions of the colon.
6. It produces a toxin which, when injected into horses, stimulates the production of a specific-neutralizing antitoxin of proved therapeutic value in the treatment of human infections.

In 1900 other investigators, notably Kruse, Flexner, and Strong and Musgrave, described bacilli resembling Shiga's bacillus. At first there was considerable confusion, but it was soon found that the various strains could be divided into two groups on the basis of their action on mannitol; the Shiga bacillus which does not ferment mannitol, and the Flexner organisms which do. Furthermore, antigenic differences separate the Shiga bacillus from members of the Flexner group. Other distinguishing traits of the Shiga bacillus are that it does not produce indol; it is highly toxic; the clinical symptoms induced by it are more severe; the mortality rate is higher; it shows little variability, and it does not hemolyze either human or animal red blood cells.

It would have been convenient to have only two distinct types of dysentery bacilli to identify, but further investigation soon showed that there were still other strains that could not be classified properly in either the Shiga or Flexner group. Of these strains, Sonne's bacillus, Schmitz's bacillus and the Newcastle bacillus are the most important. More than 100 strains have been reported and about ten different strains can be identified by serologic reactions. The nomenclature and classification are still in a state of confusion. It has been suggested that the various strains of dysentery bacilli may have arisen from a parent stem by mutation; while there is a possibility of such

*Shiga reports that 75 per cent of dysentery patients in Japan are less than ten years of age.

†For detailed descriptions of amebic and balantidial dysentery, readers are referred to textbooks on tropical medicine and protozoology.

genesis there is no conclusive evidence to support this view. From the clinical standpoint epidemics, particularly in the temperate zone, are most frequently caused by members of the second and third groups. Even in Japan epidemics of Shiga dysentery are less frequent than formerly. However, several types are usually found during extensive epidemics, except in institutional dysentery, where only a single type (usually Sonne*) may be responsible.

Unlike the typhoid bacillus, dysentery bacilli do not as a rule invade the blood stream; consequently they cannot be recovered from the blood or urine in uncomplicated cases. In a few instances they have been recovered from the blood and from joint exudates, indicating that invasion of the blood stream can occur in certain cases. It is probable that it occurs more frequently than is recognized, detection being rendered difficult by the speed with which the blood stream is cleared. It is established, however, that dysentery bacilli do not cause a true septicemia.

DIAGNOSIS

The organisms are present in the shreds of necrotic tissue and in the mixture of blood and mucus in the fecal discharge. If ordinary fecal matter is examined, isolation of the organism may be impossible. Particles of mucus are selected, washed in sterile water, spread on a MacConkey agar plate, incubated for eighteen hours at 37 degrees C., and identified by agglutination and sugar reactions. The organism is more readily recovered when stool cultures are made early in the course of the disease, and when only fresh warm specimens are examined. When only single specimens are examined, positive results are obtained in about 15 per cent of cases, but when several specimens are examined, from 50 to 60 per cent positive results are obtained. After the fifth day of disease positive results are rare. A negative stool culture is therefore of no value in excluding bacillary dysentery. Silverman has recently suggested a new method which in his hands has facilitated the determination of positive results in chronic cases. Stools allowed to stand may develop sufficient acidity to inhibit growth of dysentery bacilli. Organisms resist drying and low temperatures, but are killed in an hour by a temperature of 55 degrees C. They are destroyed by one per cent phenol in thirty minutes. If specimens must be sent to a distant laboratory, they should either be rendered definitely alkaline to litmus paper by the addition of an equal volume of three per cent sodium hydroxide, or preserved by the addition of enough glycerin to give a final concentration of 20 per cent. In some cases two or more strains of bacilli may be present at the same time.

Recognition of the etiologic agents of bacillary dysentery is a task for an expert. It is much more difficult and tedious than recognition of the pathogenic Entamoeba histolytica. Manson-Bahr, however, has pointed out that amebic dysentery can be distinguished from bacillary dysentery by the direct microscopic examination of the fecal discharges and by inspection of the mucous membrane. Dysentery bacilli give rise to a pyogenic type of exudate; Entamoeba histolytica does not. The stool in bacillary dysentery contains blood, mucus, large macrophage cells, and a striking preponderance of polymorphonuclear leukocytes. In amebic dysentery the feces also contain blood, mucus and macrophage cells, but polymorphonuclear leukocytes are less numerous. The large macrophage cells resemble Entamoeba histolytica in that they are phagocytic, but they can be distinguished from the parasite by their lack of motility.

Agglutination reaction is of little value in the diagnosis of the acute stage of bacillary dysentery, since agglutinins do not appear in the serum in appreciable concentration before the sixth day of illness and sometimes not until the twelfth or fifteenth day. Usually they disappear within three months. The serum is tested against an agglutinable strain of the Shiga bacillus and several representative strains of the other groups. The Shiga organism is well agglutinated by specific sera and shows little tendency to agglutination by others. The other types of dysentery organisms show a strong tendency to group agglutination. For these reasons human serum which agglutinates the Shiga strain, and also agglutinates other strains, is probably from a case of Shiga dysentery. Agglutinins of Flexner strains are often found in the blood serum of healthy persons. The differential diagnosis of the bacillary dysenteries by the agglutination reaction is therefore beset with many pitfalls, and complete reliance on it, without isolation of the specific organism by cultural methods, is not warranted.

PATHOLOGY

All forms of dysentery, whether bacillary, amebic or streptococcic, are primarily local diseases of the large bowel. In bacillary dysentery, however, the distribution of the local bowel lesions is influenced by the age of the patient. In infants and young children both the small and large bowels are involved in a catarrhal inflammation; ileo-

*This lactose-fermenting dysentery bacillus described by Carl Sonne in 1915 was originally described by Duval, C. W.: Another member of the dysentery group. Jour. Am. Med. Assn., xliii:381 (August 6) 1904.

colitis of children and bacillary dysentery are one and the same disease in most instances. In adults the ileum usually escapes; while the cecum and ascending colon may be involved, it is more characteristic to find lesions predominantly affecting the sigmoid colon and rectum. In Shiga dysentery, as distinguished from other bacillary dysenteries, in addition to the local lesions of the colon there are changes in other organs as a result of absorption of the toxin; there is local ulceration, necrosis of tissue, membrane formation, local production of a toxin, failure of the specific organisms to invade the blood stream as a general rule, and a favorable response to specific serum therapy. Its resemblance to diphtheria on these points is therefore striking.

The pathology of dysentery is due to the action of locally formed toxins liberated by lysis of the bacterial cell. The toxin thus is an endotoxin. The Shiga strain differs from all other strains in that the active toxin appears to be composed of two fractions, one of which resembles a true exotoxin by its free solubility and by its capacity for stimulating the fermentation of antitoxins when injected into animals. In potency this fraction is next to those of the tetanus bacillus and the diphtheria bacillus. That it is the toxin which is principally responsible for necrosis of the mucous membrane of the colon, is indicated by the fact that the parenteral injection of killed cultures or of the toxin itself produces dysentery in rabbits. Furthermore, the introduction of toxin directly into the colon results in necrosis. It is probable that the toxin elaborated in the wall of the intestine is absorbed and then eliminated in the bile.

The local pathology during the early stages of bacillary dysentery is rarely observed. The mucosa is swollen and congested with blood, giving it a deep red instead of the normal pale pink color. Here and there small ecchymotic spots are seen. The normal glistening appearance of the mucous membrane is lost as a result of swelling due to edema, hyperemia, and infiltration of the tissues with macrophages, neutrophiles and lymphocytes. The surface is further obscured by an excessive secretion poured out by the mucous glands with which the colon is plentifully supplied. Later in the course of the disease sigmoidoscopic examination reveals a mucous membrane covered with a bile-stained exudate composed of fibrin, leukocytes, red cells and necrotic mucous membrane. Shreds of this false membrane become detached and are passed in the stools. It is from them that the organism can be recovered most readily. As the necrotic material sloughs off, an ulcerated area is exposed to view. These ulcers differ from those of amebic dysentery in that they are shallow and superficial rather than deep; they are usually sharply defined and lack the undermined edges characteristic of the amebic ulcer. The latter is usually isolated from adjoining ulcers by patches of apparently normal mucous membrane; but in bacillary dysentery the ulcers usually form a sinuous "snail track" course from one fold of the mucosa to another, and the intervening mucosa is intensely hyperemic. Since the bacillary ulcers follow the free edges of the mucosal folds, they are at right angles to the long axis of the bowel, whereas isolated amebic ulcers separated by normal mucosa do not follow the intestinal folds and are usually round or oval with irregular edges. The ulcers of bacillary dysentery, being more superficial than those of amebic dysentery, are less prone to perforate. One disease is therefore characterized by lesions of an acute diffuse inflammation followed by a toxic necrosis and superficial ulceration; the other by localized areas of lysis of the submucosa, leaving overhanging edges of fairly normal appearing mucosa. The pathologic findings of the two diseases are not the same because of the differences in the nature of the processes underlying them. Entamoeba histolytica is entirely lacking in chemotactic influence; it excretes a lytic enzyme but no toxin, hence its effects are limited to the tissue in immediate relationship. Dysentery bacilli, on the other hand, are highly chemotactic and therefore give rise to an inflammatory exudate.

In some cases of bacillary dysentery the pathologic findings may be limited to edema, hyperemia and minor degrees of inflammation, ulceration being absent. In others the entire colon may become a rigid tube as a result of the intense inflammation and infiltration. In such cases the associated toxemia may cause death before ulceration can occur. The mortality rate increases in direct ratio to the portion of bowel involved. In other cases, the inflammatory process may lead to local or general stenosis. In still others, a chronic bacillary dysentery supervenes. The severity of the reaction observed is largely dependent on the type of dysentery bacillus present. In general, the most severe reactions are of Shiga origin. It should not be forgotten that patients suffering from chronic amebic dysentery may acquire acute bacillary dysentery. In such cases ulcers of both types may be seen side by side.

SYMPTOMS

Not all epidemics of dysentery are characterized by the severe symptoms observed by Sydenham in 1669. Indeed, Pringle remarks that the cases ob-

served by Willis at that time had none but watery stools, and that the name of the disease was one of the few particulars upon which Sydenham and Willis agreed. In some epidemics, therefore, the symptoms are those of a mild diarrhea unattended by constitutional reactions; in others, particularly Shiga infections, the symptoms are cholera-like in severity, causing death in two or three days, or in a shorter time if the victim is a child. The clinical symptoms may be summarized under the following headings:

Mild.

These cases, usually due to infection by bacilli of the Flexner or Sonne group, are characterized by an absence of constitutional symptoms, abdominal colic and tenesmus. The stools are watery and are passed from four to six times in twenty-four hours. Mucus may be present, but gross blood is absent. The illness lasts only a few days and terminates without complications, or it may pass into a moderately severe type of infection. The patients, being in an ambulatory state, may spread the infection widely. It is probable that the mild course is the result of partial immunity established by previous contact or infection with antigenically related organisms. It is even believed by some investigators that immunization with typhoid-paratyphoid vaccine may modify susceptibility to dysentery infections by stimulating the formation of antibodies to protein fractions common to both species.

Moderately Severe.

Cases in this group develop either from mild infections or begin acutely with chills and fever. Severe colicky or griping abdominal pain sets in and is followed by the passage of fecal, then semi-solid, and finally liquid stools containing blood and mucus. The stools may be passed as often as every half hour and cause intense tenesmus. The temperature may be elevated to 101 degrees and the pulse in proportion. The white cell count may be normal or increased, but is seldom in excess of 16,000. The great loss of water caused by the passage of liquid stools results in symptoms of dehydration. The ingestion of food results immediately in peristaltic unrest and further bowel movements, so that distaste for food becomes complete. After four days to a week the symptoms may cease suddenly, or a type of intermittent or chronic dysentery may supervene.

Fulminating or Choleraic Type.

Chills and a rapidly rising fever usher in the disease. Nausea, vomiting, headache, delirium, and diarrhea quickly follow. The stools rapidly become bloody. Collapse sets in, and death from intoxication and dehydration may occur within three days. This type of dysentery occurs rarely in previously healthy adults, but is not uncommon in infants and in debilitated or aged patients.

Chronic Bacillary Dysentery.

In a fairly large number of cases the stools do not become formed for weeks after the cessation of fever and the disappearance of blood and mucus. The slightest dietary indiscretion may result in the reappearance of dysenteric stools. As time passes, diarrhea becomes almost constant; the state of nutrition fails; anemia becomes profound, and death occurs as a result of exhaustion, or from an intercurrent infection. As previously mentioned, severe and chronic types of dysentery are usually due to infection by the Shiga strain. The clinical symptoms of chronic bacillary dysentery may resemble those of other dysenteries, particularly chronic ulcerative colitis, tuberculosis of the bowel, carcinoma of the colon, syphilis, and lymphogranuloma. Bacteriologic and serologic confirmation is therefore imperative. Patients with chronic cases, of course, are carriers, and the remarks previously made on that subject apply to them.

COMPLICATIONS

One of the most frequent and serious complications of amebic dysentery is liver abscess, but this complication is unknown in bacillary dysentery. On the other hand, acute arthritis and iritis are unknown in amebic infestation, but occur in bacillary dysentery, although rarely in infections by Flexner or Sonne organisms. The knee and ankle joints are most frequently affected. The joint becomes red, tender and swollen as the result of an effusion into the joint cavity. Fluid aspirated from the joint is generally sterile, although Shiga recovered an organism in seven of ten cases. It appears, however, that the condition is toxic in origin; this view is supported by the results of animal experimentation with sterile filtrates of Shiga cultures. The arthritis of bacillary dysentery resembles acute rheumatic fever rather than atrophic or hypertrophic arthritis, since it rarely results in permanent deformity. Arthritis and iritis may appear during the acute manifestations of dysentery, but are usually more common during convalescence. Peripheral neuritis and myocarditis may occur, but less commonly than in diphtheria. In cases of chronic dysentery the progressive ulceration of new areas, followed by healing, may result in narrowing of the lumen of the bowel due to contraction of scar tissue. Cystic degeneration of the mucosa has been described.

PROGNOSIS

The prognosis in bacillary dysentery is much better than it is in untreated amebic dysentery or chronic ulcerative colitis, because the disease has a natural tendency to be self-limited. In treatment no such superiority can be claimed. Indeed, there are few diseases more readily controlled by treatment than amebic dysentery; but except for an antitoxin no specific method of treatment has been found for bacillary dysentery. To a considerable extent the prognosis depends on the type of organism responsible for the dysentery. In infections treated with the specific serum the prognosis is better than in untreated cases, although the results are not as good as those obtained in the treatment of diphtheria with diphtheria antitoxin. In general the mortality without serum probably does not exceed five per cent, although in some epidemics it has been much higher. Exact figures are lacking, owing to the great number of sporadic and mild cases that are diagnosed as bacillary dysentery on clinical evidence, without bacteriologic or serologic confirmation. In general it may be said that the prognosis is less favorable in severely toxic cases, in young children, in aged and debilitated persons, in cases with extensive involvement of the colon and small bowel, and in cases improperly treated. Dysentery however, is not the deadly disease it was in the time of our forefathers; for that matter, neither are the other infectious diseases. This general decrease in mortality rates is no doubt the result of greatly improved diets and living conditions. A few hundred years ago even the wealthy were in a state of chronic avitaminosis.

TREATMENT

Sydenham regarded the frequent passage of dysenteric stools as an effort on the part of nature to purge the blood of toxic matter. It was natural, therefore, that he should believe in bleeding and cathartics, and that he would be opposed to the use of remedies designed to stop the diarrhea. The first thing he did for a dysenteric patient was to bleed him from the arm. This method of treatment was used extensively in typhoid and other fevers. At the present time it is not advocated in the treatment either of typhoid fever or dysentery, and must be regarded as definitely outmoded. Sydenham's next step was to order a cathartic. He observed that a cathartic always resulted in an increase in the griping pain. To relieve this pain he ordered paregoric. When the flux amounted only to a mild diarrhea, he omitted the purging and the blood-letting; but in severe cases the cathartic was repeated on alternate days. Sydenham's use of laudanum alone and his failure to use purgatives in every case drew a sharp dissent from Pringle.

This method of treatment being three hundred or more years old, it may be assumed that it too is outmoded, but such is not the case. The fetish or purgation is still with us. Almost without exception standard textbooks advocate "salts for the diarrheas" in nearly identical phraseology. Cathartics are urged until the bowels have been thoroughly cleared. In this respect, therefore, there has been no improvement in treatment in more than three hundred years. Sydenham and Willis and Pringle, of course, did not know that the poison they sought to expel by the use of physics was elaborated by a micro-organism living in and on the mucous membrane of the bowel and not in the feces, which as a matter of fact are inimical to its survival. If Sydenham had known this fact as well as he realized that cathartics were irritants of the mucous membrane of a normal bowel, it is probable that he would not have urged their use in a disease characterized by an intense inflammatory reaction. In this connection, it may be remarked that Shiga, when attempting to infect cats with dysentery bacilli, resorted to a preliminary dose of croton oil in order to reduce resistance of the mucous membrane. Gargling and swabbing the pharynx with solutions of ferric chloride was at one time regarded as good practice in the treatment of diphtheria. With a better understanding of the nature of diphtheria, the custom was abandoned; but we still cling to the use of powerful irritant cathartics in the treatment of an analogous condition.

The use of cathartics in dysentery is unphysiologic and wholly illogical; it further traumatizes an already diseased bowel; it increases the distress of the patient; it depletes the water reserves of the body; it has nothing to commend it except its antiquity. Despite the unanimity of opinion among writers on bacillary dysentery in favor of the use of physics, the literature does not reveal one scintilla of real scientific evidence to support the custom. Experimentally the presence of sodium sulphate in an isolated loop of bowel interferes with absorption by reason of its osmotic action; because of this interference it is assumed that sodium sulphate will prevent absorption of toxin in dysentery. The two conditions are not comparable. Emptying of the bowel, if it has any virtue, can be accomplished by the use of simple enemas without injury to an already diseased bowel. If there are any toxins in the contents of the bowel, which is very questionable, their absorption can be prevented or at least diminished by the use of a mixture of kaolin and animal char-

coal in tablespoonful doses every two or three hours.

For these and other reasons purgation is not advised in the treatment of bacillary dysentery. The patient suffering from dysentery should be placed at complete rest in bed. Such rest becomes impossible of accomplishment if the griping abdominal pain, tenesmus, and frequent passage of stools are allowed to go unchecked or are aggravated by the administration of purgatives. The pain should be controlled by the application of hot moist packs to the abdomen and by the administration of the smallest possible amount of opium that will accomplish the purpose. The opium should be given in repeated small doses rather than in larger doses at infrequent intervals. Tenesmus is controlled by opium and belladonna suppositories, and by irrigation of the rectal pouch with plain warm water. Large amounts of fluid should be given to replace lost fluids and to aid in the elimination of absorbed toxin. Since the ingestion of food and fluid stimulates peristalsis, and since fluids are absorbed principally from the ascending and transverse colon (which may be involved in the inflammatory reaction), it is often necessary to restrict or withhold all food and fluid by mouth. Ringer's solution and five per cent glucose may be given subcutaneously or by venoclysis, or both methods, in amounts that will maintain the urinary specific gravity at 1.015 or less.

The diet should be free from foods which leave an indigestible residue or cannot be absorbed quickly. Alcohol is rapidly absorbed, and so is glucose and lactose. Milk is often unsuitable as an exclusive diet, but orange juice, cereal water or thin gruel, are permissible. Recently an exclusive diet of grated apple, because of its pectin content, has been advocated, and dried powdered apple is now prepared commercially for treatment of diarrhea and dysentery. With cessation of the more acute dysenteric symptoms, the diet may be amplified by the addition of eggs, jellies, puddings, expressed meat juice, and purées. Food should be given in from six to ten ounce quantities at two hour intervals while the patient is awake. Care should be exercised to prevent accumulation of kaolin in the rectal pouch. If this should occur, despite the daily use of warm water enemas, an oil retention enema may be necessary to soften the mass. The administration of various intestinal antiseptics has been widely practiced in the past, but experience indicates the futility of such a custom. From a theoretical standpoint the administration of bacteriophage is indicated, but practically the results have been disappointing. Failure of phage therapy is no doubt due to the difficulty in obtaining a specific phage of sufficient potency. Riding states that the clinical course of acute bacillary dysentery is not altered by the oral administration of bacteriophage. A phage which was highly active *in vitro* did not have a similar action *in vivo*. Polyvalent antidysenteric serum should be given by intravenous or intramuscular injection. For mild cases, Shiga advises 3,000 to 4,000 antitoxic units, for moderately severe cases 6,000 to 10,000 antitoxic units, and for severely toxic cases 10,000 to 12,000 antitoxic units. The serum is prepared by the immunization of horses. It possesses bactericidal, antitoxic and agglutinating properties. For diagnostic purposes sera specific for the common strains are used, but for therapeutic use a polyvalent serum is advised. Before the serum is given, precautions should be taken to prevent untoward reactions in sensitized patients.

Treatment of chronic dysentery is very unsatisfactory. Irrigation of the colon with dilute solutions (one per cent) of silver nitrate or Dakin's solution (25 per cent) or of hot physiologic salt solution, may be tried. Ulcers visible through the sigmoidoscope may be treated directly with ten per cent silver nitrate. In intractable cases appendicostomy, cecostomy or ileostomy may be necessary in order to put the bowel at rest and to allow irrigation with Dakin's solution.

PROPHYLAXIS

Shiga reports that 30 per cent of convalescent individuals excrete organisms for some time, in some instances more than eight months. He found that 9.1 per cent of familial contacts became carriers. Fletcher and Mackinnon found that seven per cent of Flexner cases and three per cent of Shiga cases became persistent carriers. In a series of 229 cases they found 88 patients who had suffered from symptoms of dysentery for more than a year, and of these, four had been troubled for thirteen years. In general, they found the physical condition of chronic Flexner cases much superior to that of Shiga cases. The chronic Shiga cases were in such poor condition that their return to active army service was inadvisable, entirely aside from the public health hazard involved by their association with healthy men. The organisms of dysentery cannot be isolated from ordinary fecal matter by selective plating on special media with the same ease and certainty as can typhoid bacillus; this probably accounts for the fact that the stools of patients with dysentery may give negative bacteriologic findings for weeks or months in succes-

sion. Hence a few negative cultures do not exclude the possibility of chronic infections. Suspected carriers should be examined with the sigmoidoscope, and cultures should be made directly from the mucous membrane. The presence of serum agglutinins, even in a low titer, is suggestive of a chronic carrier state, since they usually disappear quickly in completely recovered cases.

Chronic carriers of dysentery bacilli should be barred from the handling or preparation of food for others. Since the police power of the state could not possibly enforce such a ruling, reliance must be placed on voluntary cooperation secured by educational efforts. Experience has shown, however, that this also is inadequate protection. The plan may reduce the incidence somewhat, but there are always enough stupid or recalcitrant persons to maintain existence of the organisms. Carriers transport the bacilli from place to place, harbor them in their intestinal tracts through the winter months, and spread them by contamination of food and by faulty disposal of excreta. The eradication of dysentery, therefore, requires measures supplementary to the control of carriers.

Since an attack of dysentery confers some degree of immunity to subsequent attacks, it was hoped that mass vaccination would solve the problem. Heat-killed vaccines similar to the typhoid-paratyphoid vaccine were tried, but their injection gave rise to such severe reactions that their use has been almost entirely abandoned. Sero-vaccines cause less reaction but have the disadvantage of inducing a sensitized state. Oral vaccination has been tried, but the results are still in doubt. Attempts to produce an immunizing toxoid have so far been unsuccessful. Thus, at least for the present, suppression of dysentery by immunization of susceptible persons is not feasible. Perhaps in the long run this will be an advantage, since it will force progress in public health practices, with a resultant reduction in morbidity not only in dysentery but also in cholera, typhoid fever, amebiasis, uncinariasis and all other enteric diseases. The danger of exposed human excreta was known to Moses; that they remain dangerous even when buried, was shown by Snow, Budd, Jenner and others. In modern communities provision is made for the disposal of human excreta; but scant provision is made for the safe disposal of animal excreta, although this is one of the principal reasons for the continued existence of the enteric infections. Flies spread typhoid fever and dysentery, and flies propagate almost exclusively in manure. Swatting the fly is good as far as it goes, but preventing their breeding is better.

WHAT CONSTITUTES ADEQUATE CARE OF THE CHILD WITH DIABETES MELLITUS?*†

Julian D. Boyd, M.D., and
Robert L. Jackson, M.D., Iowa City

During the pre-insulin era, the child with diabetes mellitus was doomed to a brief and miserable existence. Starvation offered the only means of therapeutic control of the disease, and even with rigid dieting the child merely postponed a fatal attack of acidosis. His growth ceased, he was emaciated and weak, and sooner or later most of these patients abandoned the cruel regimen of management and Nature was allowed to take her inexorable course.

With insulin available, it is dangerously easy to undertake the treatment of the child with diabetes mellitus. It is easy to satisfy the parent with a regimen which palliates the child's symptoms without too much discomfort or inconvenience for the parent or the child. Under mediocre treatment, life continues until infection or acidosis supervenes. Unless informed to the contrary, the parent may believe that no different treatment is needed, and that the continuous specter of diabetic complication is inevitable. The attitude and philosophy adopted by the physician will determine that of the patient and his family. There always is a tendency to follow the line of least resistance in therapy; the lax type of diabetic management is passive, and makes no effort to conserve the body's latent function. The conscientious physician cannot be satisfied with such a regimen, when he realizes the advantages offered by a more adequate program of treatment.

All will admit that the ideal situation would be one which would lead to complete cure of diabetes. This is impossible, and present indications offer no encouragement that juvenile diabetes may be cured by any medical treatment. Accepting this situation, the next best form of treatment is that which will make the patient as nearly normal as possible, permit full development of physique and of function, offer a minimum of physical or social handicaps and in all other ways promote a normal expectancy of life and of health. Such a regimen is directed toward the restoration and maintenance of physiologic conditions in the patient insofar as the nature of the disease and necessary limitations of therapy will permit.

During the past thirteen years, such an idealized regimen has been used as the basis of treatment of

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†From the Department of Pediatrics, College of Medicine, State University of Iowa.

children with diabetes mellitus in the Pediatric Department of the University Hospitals. During that time over 200 such patients have been treated. These patients have been regulated under a satisfactory regimen at the time of their first visits to the hospital, and subsequently have returned to the clinic at designated intervals so that the adequacy of control could be determined, undesirable conditions remedied, and observations made as to their progress. Many of these children have been followed from early childhood through adolescence. From our exhaustive records of these children we feel justified in drawing certain conclusions as to the adequacy of the regimen employed. Our plan of treatment is more stringent than that advocated by most clinicians. It has been based on the premise that the child should receive a diet which will permit optimum growth, development and activity, with the use of insulin in amounts sufficient to maintain normal blood sugar levels at all times insofar as possible. The parents have been made active participants in the child's care, being taught as much concerning the theory and practice of diabetic management as they seemed able to grasp. The department in cooperation with the home physician has maintained the initiative in their care, prescribing not only the basic diet schedule but also the actual ingredients and amounts in the diet; it has recalled parent and child to the clinic periodically, interpreted conditions to members of the household and the home community, aided in meeting problems of life related to the child's disease, and in other ways helped the child to meet his maximum capabilities. The method of treatment has remained sufficiently fluid to permit the introduction of refinements in diabetic management as these have become available, their need has been demonstrated or their benefits established. Our patients have accepted this level of intensive treatment in varying degree, ranging from scrupulous adherence to complete rejection. The well-controlled patients have remained quite free from the usual diabetic emergencies, have not developed degenerative changes, have enjoyed excellent health, have shown arrest of tooth decay, appear to be healthy normal children, and physically tend to be in advance of average children of their own age. The poorly-controlled patients have shown the effects of careless management in varying degree and with different manifestations; the only instances of diabetic cataract, hepatomegaly and retarded growth are to be found in this group of patients. We feel that our results have illustrated the advantages of a strictly physiologic goal of management.

Time does not permit ample discussion of the manner of management of the diabetic child. The remainder of the presentation will be devoted to a brief review of the technic employed. This is centered around the use of a diet adapted to the child's needs, the use of suitable amounts of insulin, the establishment of suitable conditions in the home, arranging for a long range program, and aiding the child to adjust fully to his limitations of activity.

DIET

The child needs proportionately more protein, minerals and other protective factors than the adult. We have devised a series of diets which automatically supply any individual child with a completely adequate diet, his need being gauged in terms of his height and age. With subsequent growth, the diet is correspondingly increased. These diets not only specify the appropriate amounts of protein, carbohydrate and fat, but designate the exact amount by weight of each specific food the child is to receive. Copies of these diets are available to physicians upon request.

INSULIN DOSAGE

At any time, the patient's insulin needs are proportional to his diet and to the severity of his diabetes. Without exception, we have found that diabetic children require insulin to permit them to utilize normally a diet sufficient for their needs. Through the continued use of such a weighed diet, the insulin requirement can be estimated from the degree of glycosuria, freedom from shocks, and the level of blood sugar. When blood sugar values are restored toward normal levels, the diabetic patients regain part of their sugar-handling ability, and as a consequence their insulin requirements are lessened. With a regimen which otherwise is constant, several weeks are required for constancy of insulin dosage to be established. We had thought from earlier observations that a period of three weeks was sufficient to bring the patient to a stage of stability; now we are convinced that full stabilization *may* not be attained in twice this period of hospitalization. By continuing the hospital management beyond the point where the patient has become aglycosuric, free from symptoms, and with superficial evidences of constant response, the insulin requirement will be greatly reduced during the next two or three weeks, often to half of the amount needed at the stage of apparent stability. This is not the only advantage gained; the patient then will have reached a state of increased resistance to insulin shock and to glycosuria as compared with the patient observed for a shorter period. Unless this

initial stabilization has been completed, the patient's home control will be difficult, and usually will lead to persistent glycosuria, or frequent and severe insulin shocks. Neither physician nor patient should sanction such a status as a lasting event, since it is a prologue to more severe diabetes and to the complications, sequelae and fatalities which characterize the uncontrolled disease.

When unmodified insulin is used, the effect of a single injection will seldom exceed eight hours. We have found no discernible difference between the effect of unmodified insulin and that of zinc insulin crystals, when used in the treatment of carefully controlled patients. Protamine zinc insulin, on the other hand, is liberated more slowly at the site of injection, and a single dose may exert an effect for a period exceeding twenty-four hours. Theoretically the use of such insulin may seem desirable; practically we have not found it so. Any added convenience associated with reduced frequency of injection is paid for through lessened level of control.

When unmodified insulin is used, the total day's requirement must be distributed throughout the twenty-four hours. To maintain approximate constancy of blood sugar fluctuation, four daily doses are usually needed; sometimes three, and occasionally two will suffice. A favorable subdivision of the total dosage is to give 35 per cent before breakfast, 22 per cent before the noon meal, 28 per cent before the evening meal and 15 per cent during the night; the meal doses are given thirty minutes before eating.

The establishment of insulin dosage requires close supervision of the patient throughout the period of regulation, with the observance of a regimen which assuredly is constant. Much can be accomplished with urinalysis as the only laboratory guide; however, the terminal equilibrium can be reached sooner and more dependably through knowledge of the blood sugar oscillations throughout the twenty-four hours. Without this information the patient may not reach his best level of control, and as a result may have difficulty in avoiding glycosuria or shock. With proper initial adjustment and with periodic observations to permit necessary alterations of insulin dosage, diet, or both, the patient may remain free from glycosuria and severe shocks under home management. This is a goal to be sought, since periodic or continued glycosuria, even of low grade, is incompatible with the continued well-being of the child with diabetes. Whereas the physician and patient may feel that freedom from the discomforts of insulin shock or from the tedium of strict management may condone the maintenance of mild glycosuria, each should realize that such treatment does not constitute control of the diabetic anomaly any more than mild dyspnea is justifiable in the patient under treatment for cardiac decompensation. To secure accurate control of diabetes in the home, it is essential that the patient or his parent make daily analyses of the urine for sugar, and use the results of the tests as a guide to the subsequent dosage of insulin. By the avoidance of glycosuria the sugar-handling function is conserved, and in the course of months the requisite dosage of insulin will be less than if glycosuria has been permitted.

PROVISIONS FOR HOME TREATMENT

Although the physician has the primary responsibility in the management of diabetes, the major responsibility rests with the patient or with the parent: the success of management will depend on the every-day happenings in the home. The care and fidelity in the preparation and administration of the diet; the regularity and frequency of urine tests; the care in minor readjustment of insulin dosage; the insight displayed in the meeting of minor emergencies; the knowledge of the parent or child regarding the nature of diabetes and its inescapable demands; — these factors determine the efficacy of the physician's preliminary management. For the parent to become competent to carry this load well, it is essential that the physician teach not only the letter of the law, but also the reason and philosophy underlying the treatment. Parents are eager to learn, and usually prove apt students. After a year of intimate experience in wise management of their child, often they prove more capable in interpreting diabetic complications than the physician whose contacts with the patient, at best, are casual.

Some of the more common difficulties arising in the home management of the disease require special mention. Most of these are dependent on neglect of the prescribed regimen. Once the parent has learned the mechanics of management and has seen the subsidence of symptoms, she assumes hopefully that the disease is becoming less active and that she can relax in the rigor of treatment. Instead of making urine tests daily, using samples typifying the twenty-four hour status, tests are neglected or are performed so infrequently that they offer little significant information. We urge that a notebook be kept, in which all urine tests and insulin doses are recorded, together with any manifestations such as colds, unusual activity, emotional upsets, insulin shocks and the manner of their treatment. The intelli-

gent parent can use this as a valuable guide in treatment and it offers a basis for advice from the physician. When altering insulin dosage we alter the whole day's dosage proportionally rather than increase or reduce individual doses; if a correct ratio of distribution has been determined at the onset, this ratio will change only with alteration in the amount of exercise, nature of diet, or a similar factor.

The use of unnecessarily large amounts of orange juice or of sugar in the treatment of insulin shock has led to glycosuria and subsequent confusion in the attendant's mind as to the amount of insulin needed. We find that an ounce of orange juice or a scant spoonful of sugar or syrup is sufficient to correct mild shock; if it has not proved effective within ten minutes it may be repeated. With the patient receiving protamine zinc insulin, shock is more severe; hours may elapse and large amounts of sugar may be required before the patient may be considered as recovered from the hypoglycemia. On numerous occasions our patients have been misled through the negative findings from urine tests made with Benedict's solution purchased from their pharmacist. This is due to the dispensing of Benedict's quantitative rather than the qualitative reagent. The two copper sulphate solutions look alike, but only the qualitative reagent will give the typical reduction reaction when heated with sugar solutions. We advocate that each new supply of reagent be tested with a dilute solution of corn syrup to make sure that a positive reaction may be obtained.

In outlining a long range program for treatment of a child with diabetes the item of necessary expense cannot be ignored. Insulin costs will depend on the dosage, but will range from $1.50 to $2.50 a week for the child receiving a dosage of approximately fifty units daily. A suitable diet will cost not less than $2.00 a week for raw food. Scales, testing equipment, insulin syringes, needles and incidentals will be indispensable. The patient must have these supplies at the outset of treatment, and moreover, effective arrangements should be made to assure that the expendable materials are supplied continuously. Reserve supplies of insulin should be on hand at all times. We have seen tragic results because community authorities did not recognize these needs for the indigent diabetic child. Arrangements for these economic adjustments should be made through some effective channel at the outset of treatment.

Acidosis is an event to be feared in any patient with diabetes mellitus. As long as the disease is controlled properly, acidosis *cannot* supervene. Once present, urgent treatment is imperative. The well-equipped hospital simplifies greatly the treatment of such patients. They need large amounts of fluid through intravenous channels, and repeated large doses of insulin. At frequent intervals during treatment the urine must be examined for aceto-acetic acid and for sugar; the acidosis may be considered corrected when the aceto-acetic acid output has ceased, even if the patient is still unconscious, as frequently is the case. Sugar in the urine is desirable during the treatment of acidosis, as some evidence that insulin administration is not too excessive. The patient with acidosis who is treated on the basis of his symptoms alone may easily be carried from a state of acidosis and hyperglycemia to one of insulin shock and to fatal hypoglycemia.

The final measure of successful treatment is the ultimate comfort, happiness and security of the patient. With the child, these pertain not only to the period of childhood, but must carry over into adult life. Treatment which meets the immediate needs but which fails to safeguard the patient against progressive medical or socio-economic disability cannot be considered adequate. Therefore, the patient's regimen must be one which will conserve his health, permit normal development of body and of mind, and aid him or her to reach adulthood capable of self-support. Mere prolongation of invalidism cannot be considered a suitable technic in a disease which is amenable to thorough-going control. Whereas some aspects of the program as outlined fall outside of the physician's usual activities, he is the authority toward whom the teacher, nurse, parent or other agent will turn for advice and direction as to what the patient may be expected to do, and how it is to be accomplished.

In the state of Iowa, the diabetic child is eligible for assistance through the Crippled Children's division. The program is directed toward case finding, provision of suitable medical and hospital care, the correction of related disturbances of health, arrangement for suitable follow-up services, and interpretation of the problems involved to the individuals and agencies concerned with the child's welfare. This service is administered through the Pediatric Department of the College of Medicine. Assistance for children with diabetes mellitus in accordance with their individual needs is available through the local physician. Upon request from any physician, a field worker will call at his office for advice and information. In the child whose medical condition is well under control, the interpretative services which the field worker can offer the parents, teacher or other individuals concerned are definitely of value.

TREATMENT OF TRAUMATIC INJURIES OF THE ABDOMINAL CAVITY, ITS WALL AND CONTENTS*

William E. Cody, M.D., Sioux City

In Iowa during 1936, 1937, and the first eleven months of 1938 there were 5,744 accidental deaths from all causes. Of this number 53, almost one per cent, were the result of subcutaneous injuries to the contents of the abdominal cavity. Twelve were due to rupture of the liver. The force producing the injury was considered to be concentrated in six, that is, the blow was applied to a circumscribed area by a relatively small object, such as a kick by a horse, a thrown baseball, or a fall upon a projecting object. In the other six cases the force was described as diffuse, the result of crushing, falling from a height, or being struck or run over by an automobile. Five individuals were operated upon within twenty-four hours; one on the twenty-sixth day; and the other six were treated expectantly. Three died within twenty-four hours, two on the fifth day, and one on the eighth day. The diagnosis was confirmed or established in four at autopsy. Associated injuries were rupture of the kidney, and rupture of the stomach, the latter being an operative case. The one patient with a ruptured gallbladder was operated upon the day of the accident.

There were eleven ruptures of the spleen. The force producing the injury was diffuse in ten and concentrated in one. Four patients were operated upon, three within twenty-four hours. Splenectomy was performed in two, repair of the spleen in one, and the fourth patient was operated on for delayed hemorrhage on the ninth day. Six were treated expectantly. Autopsies were performed in four instances. Associated injuries were present in two cases in the left kidney.

The next most frequently injured organ was the kidney. There were nine cases of rupture and one of laceration of the renal vessels. The force was described as concentrated in two, diffuse in seven, and indirect in the one resulting in laceration of the renal vessels, the latter being proved at autopsy. Five of these patients were operated upon, nephrectomy being done in three. One patient who was operated upon the day of injury, died on the sixteenth postoperative day of a complicating duodenal fistula. Whether this was due to an unrecognized retroperitoneal rupture of the duodenum or followed the operative procedure cannot be stated. Of the other two one was operated upon the fifth day, the other the seventh, and both died on the seventh postoperative day. Perinephritic drainage was established in two cases; in one case six days after injury, the patient dying the same day; and in the other, drainage was instituted at the end of seven weeks, the patient surviving one week.

Ruptured intestines accounted for ten deaths, the force being concentrated in six. Six of the ten injured patients were operated upon, only two on the day of injury, two on the second day, one on the third, and the other on the sixth day. Of the non-operative cases one patient died on the day of the injury; autopsy showed an associated rupture of the bladder. Of the other three, one died on the following day, one on the fourth, and the other on the seventh day. Lesions were proved at autopsy.

There were five ruptured bladders, the force being diffuse in three. Two patients were operated upon; one on the day of injury died the next day, and the other, operated upon the day after injury died the same day. Three were treated expectantly, one dying the day of injury, one, complicated with a fractured pelvis dying the day after injury, and the third patient lived three days.

Of the three ruptured stomachs, one was caused by a direct blow. Two patients were operated upon, both on the day of the injury; one died the same day, the other on the following day. The expectantly treated patient survived one day. There was an associated injury in one instance, that of a ruptured liver.

A ruptured aorta found at autopsy completes the list of fatal injuries.

No doubt many of these patients were so seriously injured that nothing could have been done to change the result. Would the results have been different, for instance, in the ten cases of ruptured intestines if all the patients had been operated upon instead of only six; and if the operation had been performed within a few hours after injury instead of many hours to several days? Would the five patients with ruptured bladders have fared better if they had all been operated on instead of only two? Could a better understanding of the expectant and surgical treatment of ruptures of the solid viscera have altered the results? I do not believe that the mortality rate in injuries to the abdominal viscera has been reduced to an irreducible minimum.

Treatment is based on diagnosis and good judgment. If the patient is in shock when admitted, treatment should be instituted immediately, consisting of rest, external heat, and morphine in moderate amounts if the pain is severe. Replacement of the circulating blood volume, thus sustain-

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ing the blood pressure, is most important. Blood transfusion, ten per cent gum acacia, ten per cent glucose or normal saline may be used; they are named in the order of efficiency for this purpose. If shock is the result of trauma only, and not associated with internal hemorrhage, or hemorrhage of any extent, the patient should be well out of shock in an hour or two. After the patient's immediate needs have been supplied, inquiry should be made into the nature of the injury. If the accident was a fall from a height, the liver, spleen and kidneys are the most frequently injured. However, it is not so much the type of the force, but the amount and where it was applied, that is significant. Trauma in the region of the liver, kidney or spleen is more likely to injure these organs. Trauma below the navel frequently injures the ileum or mesentery. An empty stomach is rarely ruptured. A full or over-distended bladder is easily ruptured, an empty one only in conjunction with a fractured pelvis. These are generalities, but they help one to arrive at a final conclusion.

After the patient has recovered from the primary shock, a physical examination should be undertaken. If he has little or no abdominal pain, complains only of soreness, and on abdominal palpation tenderness only is elicited, a tentative diagnosis or abdominal wall trauma, or abdominal wall trauma and visceral contusion, may be made. This diagnosis was made by the attending staff in twenty-two of the forty-five cases admitted to two of our Sioux City hospitals during the past five years.[1] All but three of these patients were treated expectantly, and all recovered. The indications for exploration were continued or increased abdominal pain, increased tenderness and rigidity, persistent nausea and vomiting, tympanites, increased pulse rate, and temperature. In the three surgical cases, the ileum was found contused in two, and the jejunum in one; all patients recovered. Internal hemorrhage may develop slowly or rapidly, or be delayed. Prolongation of the primary shock or increasing pulse rate and falling blood pressure, together with pallor, restlessness and air hunger that develop after apparent recovery from primary shock, indicates progressive hemorrhage. The chief sources of intraperitoneal hemorrhages are the liver, spleen, and mesenteric vessels.

Liver. In rupture of the liver the history usually indicates trauma in this region. The patient complains of pain which may be moderate or severe. If the laceration is of the dome of the liver the pain may be referred to the right shoulder and scapular region; if on the under surface, the pain is referred to the waist line anteriorly. The bleeding is usually slow due to the low blood pressure in the liver. The bleeding may be subcapsular, in which case it will later manifest itself as a mass containing blood and bile. On physical examination there is tenderness and moderate rigidity in the upper right quadrant. A hematoma may be palpated in juxtaposition to the liver. Later there may be shifting dullness due to free blood in the peritoneal cavity. Occasionally a slow pulse may be noted.[2] The right lobe is injured six times more frequently than the left.[3]

Spleen. The spleen is as likely to be ruptured by a diffuse force as by a concentrated one. A minor trauma may likewise produce a rupture of the spleen resulting in delayed hemorrhage four to seven days after the accident[4], or even longer[5]. Immediate shock is usually lacking. The rapidity with which signs of hemorrhage develop depends upon the extent of the laceration. Pain is often referred to the left shoulder. Localized pain and tenderness are usually present. A palpable hematoma in the region of the spleen may develop. Later shifting dullness may be noted. Burke and Madigan[6] reported the first recorded use of thorotrast in demonstrating lacerations of the liver and spleen. In the procedure an intravenous injection of thorotrast is given and a film is made four hours later.

Rupture of the liver or spleen may be treated expectantly or surgically. In the former, supportive measures are used, chiefly blood transfusion. When shock is the result of hemorrhage, 800 to 1,000 cubic centimeters of blood have been lost and fairly large, frequent, or continuous transfusions must be given. Wangensteen[7] says, "In fractures of the liver or spleen we rarely operate and almost invariably treat the patient expectantly, i.e., adequate transfusion, heat to the abdomen, elevation of the foot of the bed, suction to relieve or prevent distention, keeping close watch of the blood pressure and pulse rate. A continued fast pulse with a falling blood pressure, despite the employment of above procedures, indicates continued bleeding and demands operation." The last sentence is the dividing line between expectant and surgical treatment. If the surgical treatment is adopted the patient must not be in shock at the time of operation if a satisfactory outcome is to be expected. It is well to anticipate the development of shock during the operation. This is best prevented by starting the transfusion shortly after the anesthetic is begun. An upper midline incision gives access to either the liver or spleen. If the rupture is on the convex surface of the liver, packing will serve; if the under surface is lacerated, suturing if possible should be done. Splenectomy

is the procedure of choice for the spleen, although at times suturing may be sufficient. Packing should not be depended upon, but may be necessary if it is a pathologic spleen that has been ruptured. Other sources of intraperitoneal bleeding are the mesentery and the kidney if the overlying peritoneum has been torn. Duncan and Forbes[8] reviewing ten cases of ruptured liver and three of ruptured spleen, state that five patients with ruptured liver were operated upon, with one death. The five patients who received expectant treatment died. The three patients with ruptured spleen were treated surgically, and one died. In our hospital cases there were two ruptured livers. One patient, two and one-half years of age, was operated upon twenty-four hours after injury, and the other was treated expectantly; both recovered. There were four cases of ruptured spleen. Associated injuries were of the left kidney and rupture of the ileum. The force producing the injury was equally divided between the concentrated and diffuse forms. All ruptured spleens were treated surgically; two, seven hours; one, ten hours; and one fourteen hours after injury. Two of these patients received blood transfusions, one before and one after operation. Splenectomy was done in three instances, all recovered. Packing was resorted to in one case, the patient dying four hours after operation. This patient also had an associated kidney injury.

Gastro-Intestinal and Mesenteric Injuries. Ruptures of the stomach and duodenum are not common. Considerable force is required to rupture these organs; therefore, shock is nearly always present. Spillage of their irritating contents produces severe abdominal pain, and adds to the shock. The abdomen is tense and board-like. A stomach or duodenum with a pre-existing ulcer is more easily ruptured than a normal organ. A few years ago the author saw a young man with a ruptured duodenal ulcer. The injury was the result of indirect force, that is, from cranking his car. Rupture of the jejunum and ileum may or may not produce much pain during the first few hours after injury. The first symptoms may be those of a peritonitis. Frequent examinations are necessary to detect beginning localized tenderness and rigidity. Lacerations of the mesentery usually do not result in excessive bleeding. Their importance depends on the extent to which the blood supply to the intestine is compromised. Preoperative diagnosis is impossible. If in a day or two there is a beginning localized tenderness and rigidity one should keep in mind the thought of a possible gangrenous bowel. Cornwell[9] reported a case in which an individual was in an automobile accident with no apparent injury for twenty-two hours. Exploration at the end of twenty-seven hours showed a strangulated loop of ileum through a rent in the mesentery. This patient died. In abdominal injuries one should have an x-ray of the abdomen with the patient in the standing position. If this is not feasible the patient should be placed on his left side and a lateral film should be made. Visualization by x-ray of a collection of gas beneath the diaphragm is diagnostic of rupture of the gastro-intestinal tract. However, its absence does not exclude rupture. If ruptured, the stomach, duodenum, and colon contain enough gas for positive findings. Normally gas cannot be visualized in the small intestines; therefore, some time may elapse before this diagnostic finding by x-ray can be demonstrated. Retroperitoneal rupture of the duodenum can be diagnosed by x-ray visualization of gas in the retroperitoneal space to the right of the duodenum. Sperling and Rigler[10] reported recovery of such a case which had been treated by suction. Ruptures of the colon occurred in ten per cent of 652 cases of ruptures in the intestinal tract, according to Lockwood[11]. The symptoms were those of varying degrees of shock, abdominal pain, and early signs of peritonitis.

Surgical treatment should be instituted early in gastro-intestinal ruptures, based on the positive findings of a pneumoperitoneum; or exploration should be made on a probable diagnosis, based on the force and location of the blow, continued pain, nausea and vomiting. The negative exploration in three of our cases, previously mentioned, is not to be criticised. Criticism belongs to the one who waits for signs of peritonitis before recommending surgery. A methodical examination of the intestinal tract should be made at operation so that no multiple injuries are overlooked. Resection should be done if the mesentery is torn three or more inches from the bowel; any multiple lacerations should be closed. All peritoneal fluid should be removed by suction, so that drainage will not be necessary except in late cases. All cases of ruptured colon should be drained. At two of our hospitals in five years there were eight cases of ruptured small bowel, twice the number of ruptured spleens, and four times the number of ruptured livers. All patients complained of immediate but varying degrees of abdominal pain. The pain persisted and there was an increasing abdominal tenderness and rigidity. Fifty per cent had nausea and vomiting. Of the eight cases of ruptured small bowel, seven patients were operated upon, five, six, eleven, twelve, sixteen, thirty, and thirty-six hours after injury. The patient operated upon during the fifth hour after injury had an asso-

ciated ruptured bladder; recovery took place. There were three deaths, the patients who were operated upon during the twelfth, sixteenth, and thirty-sixth hours. The one operated upon during the thirtieth hour recovered and proved the exception to the rule of early operation for best results. The patient operated upon during the thirty-sixth hour had been admitted to the hospital two hours after injury, and had been observed for thirty-four hours. Autopsy showed several unrepaired lacerations. The one patient treated expectantly was admitted to the hospital fourteen hours after injury, and died on the eighth day of peritonitis. The forces producing these injuries were circumscribed in five.

Pancreas. Because of the deep-lying position of the pancreas any force which will contuse or lacerate it invariably produces associated injuries. In 1930 Stern[12], in a review of the literature, could find only twenty cases of abdominal visceral injury in which the pancreas alone was involved. The prominent symptoms are shock, nausea and vomiting, and severe epigastric pain. There is marked tenderness and rigidity. In the absence of pneumoperitoneum or the need of exploration to control hemorrhage, the patient should be treated expectantly. Continued severe pain after a few hours warrants exploration, which is best accomplished through the gastrocolic omentum. If the organ is contused or lacerated, suturing and drainage may be done. The gastrocolic opening should be closed, and drainage effected through the gastrohepatic omentum. This will go far in preventing contamination of the greater peritoneal cavity. Retroperitoneal hematomas should not be disturbed. One must be alert for other injuries. Injuries of the pancreas which are treated expectantly often result in resolution, cyst, or abscess formation. In the series we reviewed there was one case of injury to the pancreas. Continued upper abdominal pain, nausea and vomiting, together with tenderness and rigidity in the epigastrium, led to exploration sixty hours after injury. Contusion of the pancreas and a nearby retroperitoneal hematoma were found. Drainage was established and recovery took place.

Kidney. Injuries to the kidney are easily diagnosed, the cardinal features being a history of trauma, pain and hematuria. The trauma is more frequently diffuse than circumscribed; such was the case in six out of seven patients in our series. Pain varies from a dull ache to severe pain in the renal region, accompanied by nausea and vomiting. Typical renal colic may be present, caused by the passage of clots down the ureter. Localized tenderness and rigidity are present in varying degrees, depending upon the extent of injury to the kidney. Later a hematoma in the flank may be palpable. Tympanites is often associated with retroperitoneal hemorrhage. Gross hematuria occurs in 75 to 80 per cent of the cases, and microscopic hematuria is present in practically all of the cases unless the ureter is completely avulsed. Expectant treatment consists of control of shock, relief of pain, and rest. O'Conor[13] insists on rest in bed for two weeks after hematuria ceases. He reported two cases of late hematuria[14] eight and twelve days after primary hematuria had ceased. After a reasonable time an intravenous pyelogram should be made. However, it will be unsatisfactory if it is taken when the patient is in shock, if the blood pressure is low, or if a reflex anuria is present. If the intravenous pyelogram is not diagnostic, when taken under favorable conditions, a retrograde pyelogram should be made. A pyelogram demonstrates first whether or not there is an extravasation of urine, and second, the presence or absence of a functioning kidney on the other side. Ericksen[15] in 1938 reviewed six cases of rupture of congenital solitary kidney in which four patients had nephrectomies. The indications for surgical treatment are persistent gross hematuria, increase in the size of the perirenal hematoma, progressive hemorrhage, extravasation of urine into the perirenal tissues, infection of the hematoma, and intraperitoneal hemorrhage. Two of the six patients with ruptured congenital solitary kidney reviewed by Ericksen, as well as one of his own, were treated expectantly; all died. He concluded that in cases of injury to a solitary kidney the kidney should be explored and the type of treatment determined by the exploratory findings. An injured kidney which necessitates surgery usually requires removal, either primarily or secondarily for urinary fistula following drainage of the perirenal space, or for a functionless kidney. The most frequently associated injuries are rupture of the liver or spleen. In our series there were seven ruptured kidneys. All had gross hematuria. The patients complained of varying degrees of pain on the involved side. There was a palpable hematoma in one. One case was a rupture of a Wilms' tumor, diagnosed by an intravenous pyelogram. All patients were treated expectantly; all recovered.

Bladder. Rupture of the bladder is either intra- or extraperitoneal. Intraperitoneal ruptures occur three times more frequently than the latter type. Following injury there is prompt low abdominal pain, more marked with intra- than extraperitoneal rupture. There is an urgent desire to urinate, with inability, or at best a few drops of

bloody urine. The diagnosis should be made and treatment instituted before symptoms of peritonitis develop or extravasation or urine becomes evident. deTarnowsky[16] in 1930 reported thirty-five cases of intraperitoneal rupture with a 48 per cent mortality rate, and fifteen cases of extraperitoneal rupture with a 42 per cent mortality rate. Surgery performed less than twelve hours after injury results in a 33 per cent mortality rate, but the rate rapidly increases with delay, according to Gaston[17]. The least harmful diagnostic procedure is the intravenous injection of diodrast, or some other similar product, followed by x-ray of the bladder. Extravasation will be noted if there is rupture of the bladder. If for any reason the cystogram is unsatisfactory, the patient should be catheterized, and 50 to 100 cubic centimeters of air injected, as recommended by Vaughan and Rudnick[18]. If intraperitoneal rupture is present, an x-ray of the abdomen, with the patient standing, will reveal air between the liver and the diaphragm. If, on the other hand, extraperitoneal rupture is present, air will be found in the perivesical tissues. The injection of a measured amount of fluid into the bladder with the return of a lesser amount as evidence of a ruptured bladder is an unsafe and unreliable procedure. The obtaining of urine in approximately normal amounts on repeated catheterization does not prove that the bladder is intact. The catheter may each time pass into the peritoneal cavity. Bagshaw[19] reported a case of ruptured bladder, proved at autopsy, in which 40 to 60 ounces of urine were obtained daily by catheter until the patient's death on the sixth day. Smith[20] believes the rupture may be small or so situated that on catheterization several ounces of urine may be obtained. Cystoscopy is rarely needed for diagnosis. Intraperitoneal ruptures should be closed with two or three rows of sutures. All fluids should be removed from the peritoneal cavity by suction. If this is done thoroughly, drainage is not necessary unless the patient has been operated upon late, or unless one is reasonably sure the urine was previously infected. After closure of extraperitoneal ruptures, the space of Retzius should be drained. Whether the rupture is intra- or extraperitoneal, drainage of the bladder is necessary. One cannot depend upon an indwelling catheter for drainage.

SUMMARY

Of 5,744 accidental deaths in Iowa during 1936, 1937, and the first eleven months of 1938, 53 were the results of subcutaneous injuries to the contents of the abdominal cavity. These deaths were divided as follows: twelve ruptures of the liver, eleven of the spleen, nine of the kidney, one of the renal vessels, ten of the intestine, five of the bladder, three of the stomach, one of the gallbladder, and one of the aorta. These cases are analyzed with reference to the type of the force (diffuse or concentrated) which produced the injuries; whether treatment was expectant or surgical and if surgical, when it was instituted in relation to the time of the injury. Forty-five patients with subcutaneous abdominal injuries, admitted to two Sioux City hospitals during the past five years, are analyzed. The cases are divided as follows: twenty-two are considered injuries to the abdominal wall or abdominal wall with visceral contusion. Ruptures of the viscera are as follows: liver two, spleen four, small intestine eight, kidney seven, pancreas one, and one of the bladder associated with a ruptured ileum. The forces producing the injuries, the type of treatment, and the results obtained, are discussed. The symptoms and diagnosis of visceral injuries are considered, relative to the choice of treatment. Expectant and surgical treatments are outlined. No attempt has been made to summarize the literature but references which seemed useful have been mentioned.

CONCLUSIONS

1. The prognosis should be guarded, especially in patients who do not seem to be seriously injured. It may be several hours or days before the seriousness of the injury is apparent.

2. The mortality rate in visceral injuries may be reduced by careful and repeated examinations and utilization of diagnostic aids to arrive at an early diagnosis.

3. Ruptures of the liver and spleen should first be treated expectantly. When, in spite of adequate treatment, there is a continued fast pulse with a falling blood pressure, surgery should be instituted to control hemorrhage.

4. Rupture of the kidney should be treated conservatively. Progressive hemorrhage, extravasation of urine, and infection of the perirenal hematoma will require surgery.

5. Ruptures of the hollow viscera should not be treated expectantly, with the possible exception of retroperitoneal rupture of the duodenum.

6. Exploration is justifiable if abdominal pain continues to be severe, if pain, nausea and vomiting persists, and if there is increasing tenderness and rigidity of the abdomen.

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Discussion

Dr. C. J. Lohmann, Burlington: Whenever I think of the title of this most extensive subject "Treatment of Traumatic Injuries of the Abdominal Cavity, Its Wall and Contents," I think of that title the man doing general practice gave himself, "Specialists in the treatment of the acute and chronic diseases of men, women and children." It covers a multitude of things. I do not say this critically, because it is a very important subject, and Dr. Cody has covered the numerous individual conditions in closed abdominal injuries in an understanding way. My remarks will be directed to some additional factors which occasionally make the diagnosis of abdominal injuries most difficult.

First, there is that patient who is brought in with multiple major injuries, possibly including some important internal abdominal injury. In these days of high speed cars and head-on collisions, patients are no longer brought in with single injuries, but are broken up from top to bottom. It is only natural that all of us notice first, the unconsciousness of concussion, the dyspnea, cyanosis and emphysema of crushing chest injuries, or the gross distortion of major compound fractures of the extremities. Sometimes the patient dies before we know that an abdominal injury helped to cause death; or days may elapse before a clear-cut diagnosis of an abdominal injury can be made. These patients should receive our most diligent repeated study, and we should not forget that the abdomen may contain one of the conditions mentioned by Dr. Cody. This abdominal condition may be the deciding factor between life and death. The essayist has stated that rupture of the solid viscera should first be treated expectantly, and this advice certainly pertains to the group with multiple injuries. The initial shock should be expected and treated first. However, we must remember that the differential diagnosis between shock and internal hemorrhage sometimes is most difficult.

Second, there is that patient with major injuries elsewhere, who has secondary abdominal symptoms, sometimes most confusing in diagnosis. This patient will present a picture of abdominal pain and tenderness, nausea and vomiting, and severe distention to the degree of a false rigidity, as the result of a paralytic ileus. It is difficult to attribute this set of symptoms to anything but an abdominal injury. In reality, however, they may be secondary to a crushing injury of the chest, a severe pelvic fracture, or a fracture of the spine. Another possibility is a rupture somewhere in the gastro-intestinal tract with secondary peritonitis.

Last, there is that patient, who has been in an accident, who may coincidently have been suffering from some acute surgical condition of the abdomen. Not many months ago I was called late at night to attend a young woman who had been in a car accident. With three others, she was pathetically intoxicated, and no intelligent history could be obtained. It was evident she was suffering lower abdominal pain. That she vomited was not unusual, but after examination, the cause of the abdominal pain was quite vague to me. By the next morning, her mind was clear enough to remember that she had had mild abdominal distress the previous afternoon, but not severe enough to keep her from her party. The pain and tenderness had localized to the lower right quadrant and there was an increased white count. An operation was performed and an acute gangrenous appendix was removed. Picture the difficulty in diagnosis, if this girl had received a fractured pelvis or other grave fracture, had a severe or delayed shock, or the unconsciousness of a head injury. Therefore, one must always consider the remote possibility of an acute appendiceal condition, a perforated ulcer or gallbladder, or even a ruptured ectopic pregnancy in a woman.

The treatment usually presents no problems, once the type and degree of abdominal injury have been correctly diagnosed. The important point to keep in mind is the vast number of possibilities in abdominal injuries.

Dr. E. E. Munger, Jr., Spencer: Dr. Cody's comprehensive treatment of his subject leaves little opportunity for discussion. Surgical intervention or expectant management will be instituted when abdominal injury is demonstrated or suspected. The crucial point is in the diagnosis rather than in the treatment. Close observation by the surgeon is an important element in determining the outcome for

many patients who have sustained abdominal trauma. The early observation of a slow pulse, which Dr. Cody cites as an occasional accompaniment of active hemorrhage, should not be confusing. I believe it is regularly present if traumatic shock is eliminated and dangerous extravasation of blood has not occurred. This same close observation of the patient will permit detection of relatively small intraperitoneal accumulations of blood by alteration in the percussion note over the abdomen before any convincing evidence can be determined from pulse and respiratory rates, blood pressure or blood counts. This one physical finding of an enlarged area of dullness to percussion in the left hypochondriac and lumbar regions in an unconscious person was the basis for a preoperative diagnosis of ruptured spleen. Massive hemorrhage from a badly lacerated spleen was found at operation; splenectomy was performed, and the patient recovered. The unconscious person, in whom the head injury has been produced by violence such as occurs in traffic accidents, should be especially watched for evidence of serious concommitant injury to other regions of the body. The cerebral trauma, all too apparent and sinister in its import, may mask a far greater threat within the abdomen. Intraperitoneal hemorrhage from rupture of the liver or spleen varies with the extent of the injury, the time elapsed from injury to surgical intervention, and the presence of shock whether from trauma, surgical procedure or the hemmorrhage itself. These factors need to be considered in determining the management of the condition. A badly lacerated spleen may bleed even after suture of the laceration when the blood pressure and blood volume return to normal. It is at least as safe and expeditious to do splenectomy. Owing to the difficulty of access to the spleen the left rectus incision should be used where this organ is probably injured. Dr. Cody gave a very worthwhile criterion for differentiating between manifestations of shock and hemorrhage, in that traumatic shock should respond within two hours to adequate treatment. Pitchfork handle perforations of the rectosigmoid portion of the colon occur occasionally. Such injuries demand immediate study, especially with the proctoscope. The small bowel may be found within the rectum, a tear alone may be present, or the penetrating object may not have entered the bowel far enough to cause perforation. If perforation has occurred the abdomen should be explored, a prolapsed bowel replaced and cleansed, fecal masses removed, and search made for injury to the intestine and mesentery. The rectal wound should be closed with or without drainage through the rent. The abdominal wound should be drained. When reasonable evidence of intra-abdominal injury is demonstrated I believe surgical intervention is indicated as early as the patient's condition will permit. Expectant treatment invites disaster. Surgical exploration adds little to the risk if no lesion is demonstrated, but its early employment adds immeasurably to the patient's safety when the lesion is found and corrected.

TRAUMATIC LESIONS OF THE THORAX AND ITS CONTENTS*

Walter A. Anneberg, M.D., Carroll

Whether we like it or not, each and all of us answering emergency accident calls are potential emergency chest surgeons. I suspect that the esteemed chairman of this section deliberately placed this subject in my hands to bring out that fact, for I am sure he knows my leanings and aspirations are along other lines.

A high percentage of the fatal accidents of industry, transportation and civil life, results in injury of the chest, and all too often, from a combination of injuries of the chest, abdomen and head. If injuries of both chest and abdomen are present, the chest should be repaired first. The immediate results of these injuries may so embarrass the vital functions of respiration and circulation that death may occur within a few minutes, and many accidents result in such extensive injuries that death occurs in spite of any treatment. Extensive records of autopsies show that ten per cent of the deaths from chest injuries might have been prevented. As Dr. Frank Barry so aptly states, "Intelligent treatment of injuries to the thoracic viscera must depend upon adequate comprehension of the anatomy and physiology of these organs."

The thorax is comprised of four compartments; the closed pericardial, the two pleural sacs, with loose aureolar tissue between them, and the mediastinum which contains important nerves, the friable thoracic duct, lymph nodes, the esophagus, and the great vessels. These nerves, like the lungs and heart, are subject to direct trauma and displacement and twisting from compression. Under normal conditions, the pressure in the pleural cavities varies from a minus nine centimeters of water in full inspiration to a minus three or minus four centimeters in expiration. Due to the thinness of the pleurae, and the motility and looseness of the mediastinal structures, any alteration from the normal in one of the pleural cavities results in a similar change in the other two sacs. This indirect effect on the pericardium is less marked, due to its thickness and its fixation to the diaphragm.

CONTUSIONS

The simplest form of injury is the contusion without rib or sternal fracture. If this injury is over the lungs there may be a resultant pneumonia or pleurisy; this pleurisy may be dry or with effusion, or bloody. The possibility of a latent tuberculosis must be kept in mind. Often there is a low-grade temperature for a few days. The pa-

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tient should be kept in bed until the fluid is absorbed, and until the temperature has remained at normal for one week. If fluid is present, a diagnostic puncture is usually indicated. Aspiration of the fluid contents is done only when and if symptoms indicate pressure, such as dyspnea, tachycardia, and displacement of the heart to the opposite side. When the fluid is bloody, the patient may or may not show signs of shock or hemorrhage. If the amount is minimal, it should be left alone. If a fairly large amount of blood is present, aspiration and subsequent injection of air may be done. This aspirated blood, if kept sterile, may be used as an autotransfusion, similar to the blood collected in the peritoneal cavity following an ectopic pregnancy.

Strapping the chest and sedation (morphine) are essential for the comfort of the patient and to lessen the extent of the shock. Shock of an alarming nature occurs following most chest injuries, but unless cyanosis and dyspnea develop along with shock, the outcome is usually favorable, and the hemorrhage lessens and remains controlled unless too active treatment is used. We must remember that intravenous fluids raise blood pressure. A safe routine is subcutaneous fluids, heat, relief of pain, and Trendelenburg's position. Careful history taking and inspection of the mouth, as well as x-rays, rule out the possibility of a foreign body in a bronchus. Paralytic ileus and urinary retention seem to go hand in hand with chest injuries, especially with the fracture of a rib. The reason is not obvious, but distention of the abdomen is a common accompaniment. Intravenous hypertonic salt solution and the drug prostigmin, are valuable therapeutic agents in overcoming these embarrassing abdominal sequelae. If the abdomen is rigid, but soft at the end of expiration, and soft under morphine, the injury is likely in the chest.

Contusions of the heart often give rise to characteristic symptoms. Such injuries may be accompanied by dyspnea, and precordial pain and tachycardia or fibrillation, or even coronary pain with friction rub. This traumatic syndrome should be given serious consideration. Strict bed rest and sedatives are advised, electrocardiographic studies should be made, and the recommendations of a good internist should be sought. In the absence of definite criteria, the diagnosis of cardiac contusion should be made with the greatest of caution because of the insurance and court trial factors. Most important is a clear bill of health prior to the accident. Careful attention should be paid to any signs suggesting circulatory embarrassment, which comes on as a rule rather promptly after a chest injury. Drs. Kahn and Kahn of New York have reported a case of a young man, with a negative Wassermann reaction and normal physical examination prior to injury, who developed aortic regurgitation following an accident in which he was suddenly covered with sand up to the nipple line while he was standing in a ditch. They report many other cases of heart decompensation due to sudden compression. The prognosis in these cases is bad, due to the tearing of the aortic valves. Traumatic asphyxia, the condition in which the head, neck and chest become discolored, the sclera red and injected, with thick swollen tongue and difficulty in breathing, has a good prognosis. The condition is due to the sudden compression, but the heart valves remain competent, and the sudden increased pressure of blood is directed toward the upper end of the body. Ernest Bryght of Cleveland listed a large number of patients who died of rupture of the heart, 50 per cent occurring without a fracture or penetrating wound. Many of these patients actually died of hemopericardium tamponade, which will be discussed under penetrating wounds of the heart.

PLEUROPULMONARY WOUNDS

Pleuropulmonary wounds are mainly of two types: first, the group with the intact chest wall; and second, the group with the open wounds involving the chest wall, pleura and lung. In the first group, spontaneous pneumothorax with rupture of the lung is a typical example. This may occur following a blow, unusual strain, or a fit of coughing. There may be insignificant symptoms of mild pain, shortness of breath, palpitation, or a flopping sensation in the chest. On the other hand, symptoms may be severe and alarming, due to the ball-valve action with the pumping of air into the pleural sac with each respiratory effort, through a tear in the lung or bronchus. This tension pneumothorax or a high intrapleural pressure is then built up with marked dyspnea, cyanosis, rapid pulse, with tympani on the affected side, and with cardiac and mediastinal displacement to the opposite side. Repeated x-rays are essential, and portable x-ray units are extremely valuable in conserving the patient's energy. Prompt, repeated aspiration of the trapped air, and drainage by the closed methor similar to that used in the treatment of empyema, are life-saving procedures in these patients. If the tear in the lung involves the mediastinal surface, it may be necessary to incise the skin along the carotid sheath and above the sternum to allow escape of this air. The most common cause of these injuries with an intact chest wall is a fracture of a rib. Often a clue to this condi-

tion may be found at the site of rib fracture, with a small area of hemorrhage or localized emphysema present at the site of fracture, or extensive external emphysema may be present. Pulmonary bleeding is usually controlled by the collapse of the lung, and the pneumothorax. Strapping the chest and sedatives again are a great comfort to the patient. Blowing exercises in the convalescent state may bring a return of symptoms and is contraindicated.

Penetrating wounds due to an ice pick, bullet, or stilletto often present the same picture of tension pneumothorax. When the lung is injured, air escapes, and the result is internal pneumothorax, emphysema of the chest wall, or emphysema of the mediastinum with pressure in the neck. There are two very characteristic signs of penetrating wounds.

1. Lagging of the affected side on respiration and the discovery of moist râles in the area involved, often with decreased breath sounds, and decreased resonance on percussion. The pulse rate is usually increased, and accompanied by fever and an elevated white blood count.

2. X-ray pictures show some increased density with elevation of the diaphragm on the affected side. Often the elevated diaphragm is the only evidence of penetration seen in the x-ray, and it is present even with large amounts of hemothorax.

Hemorrhage from an intercostal or internal mammary vessel is uncommon in this type of accident, but it must be kept in mind. Hemorrhage from the internal mammary vessels or intercostal vessels is too frequently overlooked. This type of hemorrhage calls for open operation, if and when it is diagnosed, with ligation of the bleeding vessel on both sides of the tear. Rib fractures near the sternum and sternal fractures most commonly involve the internal mammary vessel, while rib fractures at any point may involve the intercostal vessels. Mass ligature around a rib, and resection of a part of the rib at the site of the lesion exposing the vessel, are quick aids in controlling this hemorrhage, and this blood in the pleural cavity, if kept sterile, may be used in autotransfusions. Empyema is rare after this type of lesion, but if present, it should be drained fully and completely, preferably by the closed method. Hemothorax follows most injuries in some degree, and hemorrhage is said to be the most common cause of death during the first twenty-four hours in chest injuries. The differential diagnosis between ordinary hemothorax and blood in the pleural cavity, due to hemorrhage from an intercostal or internal mammary vessel, requires repeated observation of the patient, with blood pressure readings every thirty minutes, hemoglobin and red cell counts, and repeated x-rays. Ordinarily blood in the pleural cavity is not aspirated for three to five days, unless it is embarrassing the patient's respiration. Pulmonary abscess is treated as any lung abscess.

WOUNDS OF THE CHEST WALL

Wounds of the chest wall communicating with the pleural space, so-called sucking wounds, are potentially serious, partly because of variation in intrapleural pressure and partly from the added risk of infection. As a rule, the larger the wound, the more serious it may become. The immediate effect of the sudden entrance of a large amount of air into the pleural cavity is more or less collapse of the lung, followed by temporary cessation of respiration, which in turn is followed by paradoxic respiration or mediastinal swing. During inspiration the air taken into the lung on the closed side of the chest is partly drawn from the air in the trachea and partly from the air of the larger bronchi of the collapsed lung. During expiration air is expelled partly through the trachea and partly into the collapsed lung, which becomes expanded in proportion to the force of the expiratory effort. The movements on the side of the open pneumothorax are therefore paradoxic, in that the lung collapses during inspiration and expands during expiration. This can be seen in the fluoroscope. These opposing forces in the two lungs cause a rapid decrease in oxygen, producing prolonged expiration and dyspnea, seriously disturbing the patient and the heart. With each respiration the mediastinum is drawn to the closed side on inspiration and to the normal side on expiration. The heart slows down, the pulse becomes weak and irregular, and death is a common termination. This condition, once it is recognized, can be overcome easily and effectively by closing the gap in the chest wall or by placing a moist towel over it. If nothing else is available the gap can be closed by placing the flat of one's hand over the hole. Once the moist towel is placed over this hole, the change in the patient is striking. On inspiration the towel is forced against the chest wall firmly, and the air enters the lung through the trachea. On expiration the trapped air in the pleural space pushes the wet towel away from the chest with the pumping action exactly reversed from that seen in tension pneumothorax. In a few minutes, the patient is entirely comfortable and breathing normally. Of course, this wound must be closed surgically as soon as feasible. If the pleura is

grossly contaminated, it should be drained, preferably by the closed method.

WOUNDS OF THE PERICARDIUM AND HEART (HEART TAMPONADE)

The following true story is being related to emphasize a certain point. A resident interne in a Chicago hospital, was awakened early one morning, when an unconscious boy was brought into the hospital with a stab wound over the heart. The boy was, to all intents and purposes, dead. The respirations had practically ceased, no pulse could be felt at the wrist, and no heart tones could be heard over the heart. No heart pulsations could be seen under the fluoroscope. The pupils were dilated with no reaction to light. Because the operating room was adjacent to the x-ray room he was taken there for the autopsy. Two ribs were quickly removed over the pericardium, the sac was opened, and both liquid blood and clots gushed forth. A rent was found in the ventricle, and while the resident and the interne watched, the heart began to beat. I have heard of some operations ending up in the autopsy room, but to my knowledge this is the first autopsy ending up as an operation. There was a scurried attempt at sterilization, sterile gloves and gowns were put on, and sterile instruments were handed in as quickly as they could be obtained. The rent in the ventricle was repaired, the pericardium was drained, and the boy lived, albeit through a stormy septicemic postoperative course. The lesson to be learned here is this: with heart tamponade present, that is, blood under pressure in the pericardium from a ruptured heart wall, with absent or muffled heart sounds, and loss of pulsation as seen in the fluoroscope, speed in releasing that pressure is the one and only life-saving factor. As our late friend and teacher, Dr. Charles Rowan, said about gastric perforated ulcer, "I would rather be operated on in the first hour following a perforation by the occasional operator at the crossroads, than by the best surgeon in the land after twelve or twenty-four hours." We must second that statement for heart tamponade, severe continued intrathoracic bleeding, tension pneumothorax and sucking wounds of the thorax.

THE MEDIASTINUM

Rupture of the trachea or thoracic duct may occur in wounds penetrating the mediastinum. Rupture of the trachea is followed by alarming symptoms of pressure, dyspnea, cyanosis, and choking caused by emphysema of the mediastinum. This rapidly spreads to the neck and may require incisions in the skin over the carotid sheath, above the sternum, and even tracheotomy. Injuries to the thoracic duct usually result in chyle emptying into the left pleura. This may or may not prove serious. Repeated aspiration of a chylothorax is, as a rule, sufficient. There are cases on record in which the contents of a chylothorax have been injected intravenously with good results. Injuries to the large vessels in the mediastinum usually cause death in a very few minutes.

PERFORATION OF DIAPHRAGM

Injury to the diaphragm should be considered in all chest injuries. Small wounds are often overlooked, and the large wounds usually result in hernia. The symptoms resulting from a ruptured diaphragm depend upon which viscera pass through the opening and whether or not adhesions are present. We have seen patients with diaphragmatic hernia with no symptoms, while on the other hand there may be signs of fluid and air in the chest, with the patient complaining of pain in the neck and shoulder, dyspnea, shock, vomiting, and even obstruction. These symptoms are often associated with a disturbed heart action. An x-ray makes the diagnosis or rules it out. The hernia should be repaired, if it is causing symptoms, when the patient is ready. The crushing of the phrenic nerve on the affected side is said to be a great aid during repair.

In observing a patient with a chest injury, one should ask himself these questions. Is the wound penetrating? If not penetrating, are intrathoracic contents injured? If the wound is the penetrating type, one can assume that some injury has taken place inside. Is the bleeding still active? Can it be controlled? The keynote in treating chest injuries is conservatism. Most of the cases require simple therapy, but careful watching for complications. Observance of the following points will prove helpful.

1. Disinfect and debride the wounds.
2. Treat the patient for shock, but not too vigorously at first.
3. Alleviate pain by strapping and sedatives.
4. Give the patient antitoxin for tetanus and gas gangrene.
5. If the wound is of the sucking variety, immediate closure is necessary, even if it is closed merely with a wet towel.
6. If continued hemorrhage is present, as seen by a continued lowering of the blood pressure and continued loss of hemoglobin and red cells, exploration must be done and the bleeding vessels ligated; these are chiefly intercostal and internal mammary vessels.

7. Tension pneumothorax which may be fatal if unrelieved, can be made a simple complication by repeated aspiration or closed drainage.

8. Last, but not least, hemorrhage is the most common cause of death. The treatment is chiefly conservative, but a few patients can be saved by radical surgery.

MECKEL'S DIVERTICULUM AS A CAUSE OF INTESTINAL OBSTRUCTION

R. R. Edwards, M.D., Centerville

On August 5, 1937, the following case came under the care of Drs. Leffert, Brummitt and Edwards of Centerville, Iowa.

CASE REPORT

Present Illness: The patient, a white male, nine years of age, was admitted to St. Joseph Hospital at 2:30 a. m. complaining of intermittent generalized abdominal pain, crampy in nature and so intense as to double him up and make him cry out. The onset had been sudden, awakening him from a sound sleep two hours prior to admission. There was no history of nausea or vomiting; some flatus had passed per rectum but no feces. The temperature was 98 degrees, pulse 84, respirations 24 per minute and white blood count 11,000. These symptoms were not unlike those of a beginning severe gastro-enteritis, which was prevalent at the time and the patient was placed under observation with an icebag to the abdomen. At 7:30 a. m. the cramps had practically ceased, the temperature was 98 degrees, pulse 92, respirations 20 and white blood count 16,000. At 11:00 a. m. the patient vomited for the first and only time a small amount of clear fluid. The temperature had increased to 99.4 degrees, pulse 96, respirations 24 and the white blood count 17,300.

Physical Examination: The patient was a well-nourished boy with slight dryness of skin and rather anxious attitude, aggravated by paroxysms of abdominal pain. The ears, eyes, nose, throat, and neck were free from evidence of pathology. The chest was symmetrical and expanded normally. The lungs were clear throughout, the bases descended well, the percussion was resonant, breath sounds were vesicular and no râles were heard. The heart was not enlarged and no murmurs were present. The abdomen presented a natural contour, without scars. Moderate borborygmus could be elicited but there was no visible evidence of increased peristalsis. No masses or solid organs could be felt within the abdomen. Tenderness was present just below the umbilicus, and seemed to extend into both the right and left quadrants. The maximum point of tenderness, although poorly defined, seemed to be just below and to the right of the umbilicus. There was no evidence of distention, rigidity, or shifting dullness. Examination for hernia was negative. The genital organs were normal for a male in the prepuberty age. The rectal sphincter tone was good, there were no masses, tenderness or bloody discharge.

Family History: The father, mother, four brothers and two sisters were living and well. One sister died in infancy and one brother died of diphtheria at the age of five years. The family gave no history of familial or hereditary diseases.

Past Medical History: The patient was born at full term, weighed eleven pounds, was a vertex presentation and was said to have had an extra large umbilical cord. There was no history of umbilical herniation or fistula. He had the ordinary diseases of childhood with no history of fevers or systemic diseases.

Operation: A tentative diagnosis of acute appendicitis was made, and at 1:00 p. m. on the day of admission, under an ethylene ether anesthesia, a laparotomy was done through a right lower pararectus incision. As soon as the peritoneum was opened a large amount of clear, odorless, serosanguineous fluid welled up into the wound from the free peritoneal cavity. Forthwith there presented a dark, almost black lustreless loop of small intestine. This loop consisted of twelve inches of terminal ileum which had become twisted and strangulated by a fibrous band, extending from the tip of a Meckel's diverticulum to the base of the mesentery just above the sacral promontory. The band, which formed a half hitch around the involved ileum, was cut and ligated at both ends. The gangrenous bowel, which failed to show any evidence of viability, was then resected to within one inch of the ileocecal valve; this stump of ileum was then inverted and a side to side ileocecostomy done. The Meckel's diverticulum was located twenty-four inches proximal to the ileocecal valve, and consisted of a smooth tapering tube one and one-half inches in length, with a broad base and the appearance of normal bowel structure. There was no evidence of intrinsic or extrinsic pathology. Neither the diverticulum nor the appendix was removed. A routine closure of the wound was done in layers.

Postoperative Diagnosis: Intestinal obstruction with gangrenous volvulus secondary to a Meckel's diverticulum with a persistent, attached fibrous band.

Postoperative Course: The first forty-eight hours were stormy with the temperature rising to

104 degrees, and pulse 140 per minute. This reaction gradually subsided and the patient was discharged on the twelfth postoperative day. His general condition was good and the wound was well healed. At the time this is written, twenty-three months after the operation, the patient is in excellent health, and says he has never experienced any abdominal distress.

DISCUSSION

Much has been written in the past twenty-five years about Meckel's diverticulum and its pathologic manifestations. The abnormality is said to have been first described by Lavator[1] in 1700. Ruysh[1] in 1701 presented an illustration of the anomaly in his "Thesarus Anatomicus" and designated it as a diverticulum. It remained for Meckel in 1812 to describe the embryology and emphasize its possibilities as a pathologic entity. The embryology is so frequently reviewed in the literature that it will be mentioned only briefly. The diverticulum is a remnant of the vitelline duct which connects the yolk sac and primitive bowel in the embryo up to about the seventh or eighth week of life, at which time obliteration takes place. The vitelline artery and veins, which are the precursors of the superior mesenteric artery and portal vein respectively, also disappear early. These structures fail to atrophy in one to two per cent of all persons, and for some undetermined reason this occurs three times more frequently in the male than the female. These remnants present themselves in a great variety of ways.

1. Simple Meckel's diverticulum, located eighteen to thirty-six inches proximal to the ileocecal valve, extending from the antimesenteric border, variable in length, usually from one to four inches and equipped with a frail mesentery and scant blood supply.

2. Associated with the diverticulum may be a fibrous band, extending from the tip and attached to the umbilicus, base of the mesentery, another bowel, abdominal tumor, into a hernial sac, or any other place in the abdominal cavity. This band is variable in length and has three possible origins; first, the remaining portion of the vitelline duct; second, the persistent remnant of the vitelline blood vessels; or third, an acquired band secondary to the stretching of scar tissue which has fixed the tip to an adjacent structure during an episode of acute diverticulitis. Bands may be present without a diverticulum.

3. The duct may be patent throughout, and result in a fecal fistula at the umbilicus. Cases are reported by Porter[2] of herniation of bowel through such a fistula. Still another variation is an obliteration of that portion of the duct nearest the ileum with a subsequent mucous fistula.

4. If both ends obliterate, leaving an enclosed secreting mucosa, an enterocystoma results. Halstead[3] reports such a case which had lost its umbilical attachment and caused obstruction by traction and angulation of the ileum.

5. Dolan[4] described a case in which both ends of the diverticulum had separated and become adherent to the mesentery, and the resulting loop caused a volvulus of ileum.

The following pathology has been reported as involving the diverticulum directly or indirectly.

1. Diverticulitis.

2. Ulceration with hemorrhage, or perforation in the presence of gastric mucosa.

3. Neoplasm. Nygaard and Walters[5] in 1936 reported only seventeen cases of malignancy from the literature and added a leiomyosarcoma of their own. Collins, Collins and Andrews[6] reported recently the fifth case on record of carcinoid tumor of the diverticulum.

4. Intestinal obstruction is by far the most common complication encountered and is of major concern in this discussion. Wellington[8] reported its occurrence in 44 per cent of 326 operated diverticula collected from the literature. Richardson[8] reported 118 cases of intestinal obstruction from all causes, of which three per cent were due to diverticula. Lechtenstern[8] in reporting 1,134 cases, combined with 991 cases of other observers, found the diverticulum as a cause in six per cent of all intestinal obstruction.

Mechanical obstruction may be caused in several ways as cited by Ochsner.[7]

A. With a free unattached diverticulum.

1. Knot around the intestine.

2. Kinking by traction of a distended cystic diverticulum.

3. Twisting of bowel at origin of diverticulum.

4. Chronic inflammation with stenosis of bowel lumen at the base of the diverticulum.

5. Acute diverticulitis.

6. Intussusception should be included here also.

B. With attached diverticulum.

1. Band constricting or interfering with blood supply.

2. Volvulus of intestine attached to diverticulum with the latter as the fixed point of rotation.

3. Strangulation over a tightly drawn diverticulum.

4. Acute diverticulitis.

5. Prolapse of intestine through an umbilical fistula.

This will include most of the cases of obstruction. However, I have reviewed the following unusual cases from the literature: one, a fecal impaction having its origin in a diverticulum; two, the mesentery of the diverticulum rather than the diverticulum as a cause of obstruction; three, a detached diverticulum, both ends of which had become secondarily attached to the intestinal mesentery with volvulus formation; and four, a duplex ileum cited by Porter.[4]

CONCLUSIONS

This case report and the data collected from the literature should bring to the attention of the diagnostician and surgeon the following points:

1. Meckel's diverticulum is present in two per cent of all persons. It is three times more prevalent in males than females.

2. It should be considered in all abdominal conditions which present diagnostic problems.

3. Inspection of the distal ileum should be done routinely if at all feasible. This is especially true in the presence of a chronic appendiceal condition which all too often does not explain the clinical picture.

4. Intestinal obstruction is the most common complication of a diverticulum, and six per cent of all types of obstruction are caused by the remnant.

5. Hemorrhage per rectum, occult or gross, may have its origin in a diverticulum.

6. The clinical manifestations of a Meckel's diverticulum are so protean and bizarre that its preoperative diagnosis is usually a gamble.

7. Each case requires individual consideration as to details of treatment. However, the policy of minimal surgery should be adhered to closely. I am convinced that the additional trauma of removing this little patient's appendix and diverticulum would have greatly jeopardized his chances for life.

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MASSIVE ATELECTASIS*

A Report of Four Cases

Herbert Payne Miller, M.D., F.A.C.S.,
Rock Island, Illinois

Massive collapse of the lung may be defined as the sudden collapse of one or more lobes of the lung. The condition, first described by William Pasteur in 1890, is a definite clinical entity, often sudden and dramatic in its onset, more common on the right than the left side, more common in males than females, and probably accounts for from 20 to 70 per cent of postoperative pulmonary complications formerly classified as ether pneumonia or postanesthetic pneumonia.

The condition has been generally recognized in the last decade, series of fifty and sixty cases being reported frequently in the American literature. The etiology has been generally agreed upon as obstruction of the larger bronchi and mucus. All conditions which hinder expulsion, increase the viscosity of the mucus or reduce the vital capacity of the lungs tend to initiate atelectasis. It is more common following upper abdominal operations especially those on the gallbladder or stomach. The type of anesthesia makes little difference; cases occur following all types. In local or spinal anesthesia with deep preliminary narcosis, with prolonged sedation afterward causing a deficient cough reflex, the danger may be greater than in other types of anesthesia.

In the massive type the onset is usually from thirty-six to forty-eight hours after operation. The first indication is a rise in temperature which may be mild at first followed by a sudden increase to a high figure. There may be pain in the chest or abdomen, dyspnea, cyanosis, nervousness and restlessness accompanied by cough and sputum. The sputum is usually thick and purulent with a yellowish or greenish color due to superimposed infection. Physical examination reveals diminished movement of the chest on the involved side, displacement of the heart to the affected side, hyperresonance at first with dullness later, and diminished breath sounds. With recovery, restoration of breath sounds takes place with the presence of some moist râles. If consolidation occurs due to superimposed pneumonia typical signs of consolidation appear.

Diagnosis is confirmed by the x-ray findings. Articles published in the last ten years agree on displacement of the heart and mediastinum to the affected side as the most characteristic sign, although it may be absent in mild cases. Displacement of the trachea and curvature of the spine

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to the uninvolved side, rise of the diaphragm on the affected side, flattening of the chest and narrowing of the interspaces on the affected side, with widening and ballooning of the chest and increased radioluceny of the lung tissue on the unaffected side, may also be seen. The lung tissue on the affected side may show no early change, but clouding later occurs and after fluid or secretion has accumulated in the bronchioles and alveoli a very dense radiopacity is formed.

Differential diagnosis must be made from pneumonia, infarct or embolism and subdiaphragmatic abscess. The prompt disappearance of symptoms in successfully treated cases differentiates the condition from the pneumonias. The chief differential sign is the displacement of the heart and mediastinum toward the affected side. In subdiaphragmatic abscess the heart is pushed to the opposite side as in empyema. Atelectasis is probably much more common postoperatively, at least as an initial condition, than pneumonia.

Prophylaxis is important. Postoperative narcosis, in the effort to give the patient as much comfort as possible, diminishes the cough reflex and tends to hinder elimination of secretions. Aspiration of secretions at the operating table and thorough aeration of the lungs with oxygen and carbon dioxide during the operation and at its conclusion, are important. Tight abdominal binders which dimish the vital capacity of the lungs should be avoided. Dilatation of the stomach should be controlled with the nasal tube and syphonage. Frequent change of position, deep breathing exercises and routine inhalation of carbon dioxide and oxygen are recommended, particularly in upper abdominal surgery. Mouth infections should be treated before operation, and respiratory infections, either in the upper tract or bronchi, must be ruled out before operation, except in emergency cases.

The universal treatment after the condition is recognized is the inhalation of carbon dioxide and oxygen at frequent intervals. The patient is placed on the uninvolved side so that the involved lobe is uppermost during inhalations. Potassium iodide may be given to fluidify the secretions, but atropine should not be used since it tends to thicken the mucus and increase its tenaciousness. All abdominal dressings should be loosened to lessen resistance to respiratory movement as much as possible. Opiates should be avoided as much as possible. The most effective treatment where the services of an expert bronchoscopist are available is aspiration of the bronchial secretions with the bronchoscope at the bedside. Improvement is usually prompt and followed by rapid subsidence of temperature. It is reported that second aspiration is rarely necessary.

CASE REPORTS

Case 1. Mr. C. M., printer, sixty-three years of age, was admitted on April 18, 1935, with a diagnosis of chronic duodenal ulcer with repeated hemorrhages and pyloric obstruction. After four weeks' preparation with transfusion and Sippy management, a posterior gastro-enterostomy was performed on May 20, 1935, under ether anesthesia. During the first two days after operation the pulse ranged from 72 to 84; the temperature from 98.6 to 99.2 degrees; and respirations, 20. On the evening of the third day the patient complained of mucus in the throat, distress in breathing and coughing, and pain in the abdomen. The temperature rose to 104 degrees and respirations to 40 within thirty-six hours. Absence of breath sounds and dullness were noted in the left chest. Large quantities of greenish mucus were brought up at the end of another twenty-four hours under the influence of frequent changes in position. Subjective relief accompanied the productive cough. The temperature, pulse and respiration quickly dropped, and by the fifth day they were normal. At no time were there signs of consolidation. One week after recovery from the atelectasis sudden circulatory failure occurred with death. The cause of death was probably coronary thrombosis; autopsy privilege was denied. The free interval of about one week after the pulmonary incident, dur



Fig. 1—Case 1

ing which the patient had a perfectly normal postoperative course, would make it appear that the two conditions were separate. An x-ray film taken at the height of the symptoms on the second day showed displacement of the heart to the left and some haziness at the left base, rise in the left diaphragm, and flattening of the left chest.

Case 2. Mr. E. K., laborer, sixty-three years of age, was admitted on July 10, 1938, with a diagnosis of carcinoma of the stomach, generalized arteriosclerosis and chronic myocarditis. After a five-weeks' period of preparation, subtotal resection of the stomach was performed under spinal anesthesia with ethylene-ether sequence. Postoperative treatment consisted of constant gastric syphonage, intravenous fluids, breathing and leg exercises, frequent changes of position, and carbon dioxide inhalations. Coughing began the night of the second day with expectoration of thick yellowish mucus. The coughing caused pain in the surgical area. By the next morning the pulse was 128, and the temperature 100.2 degrees. Audible râles



Fig. 2—Case 2

and dyspnea were present. The patient was unable to raise mucus because it hurt too much to cough or clear the throat. Respirations gradually mounted to 40 by the second day after onset of the respiratory distress. Examination showed diminished breath sounds and dullness at the left base. An x-ray film (Fig. 2) taken four days after onset of the lung condition was reported as showing marked density over the left chest with displacement of the heart and mediastinal shadows to that side. A diagnosis was made of massive atelectasis involving the left lung. In spite of strenuous measures such as frequent change of position, continuous oxygen with carbon dioxide inhalations and stimulation, the effective expellation of mucus never occurred. Gradual weakening of the patient's condition followed and death from exhaustion and circulatory failure occurred on the seventh postoperative day. Autopsy was not permitted.

Case 3. Mrs. M. G., housewife, fifty-eight years of age, was admitted on December 5, 1938, with a diagnosis of duodenal ulcer with chronic pyloric obstruction. After three days' preparation a posterior gastro-enterostomy under ethylene-ether anesthesia was performed without difficulty, either surgically or with anesthesia. Constant gastric syphonage was instituted postoperatively at once with water in small doses by mouth. Fluids and carbohydrates were maintained in adequate amounts by intravenous administration. The general condition was good until the third postoperative day, when the temperature suddenly rose to 103° degrees, continuing high until the sixth day when it subsided rapidly to normal. With the onset of the temperature there was restlessness, cyanosis, audible râles, and a weak rapid pulse. No pain in the chest was mentioned. An examination showed diminished excursion, loss of breath



Fig. 3—Case 3

sounds and dullness at the right base. The patient progressed nicely from the sixth to the eighth day and, then developed a secondary rise of temperature. The apparent cause of death was a terminal pneumonia superimposed on the atelectasis of the right base. An x-ray film (Fig. 3) of the

chest on the second day of atelectasis showed increased density over the right lung with displacement of the heart to the right. The right diaphragm was elevated and the findings were consistent with atelectasis. Permission was granted for an autopsy which showed involvement of the chest in the right lower lobe. There were a few adhesions in the right pleural cavity and consolidation of the right lower lobe. Incision of this showed dry red hepatization. The miscroscopic

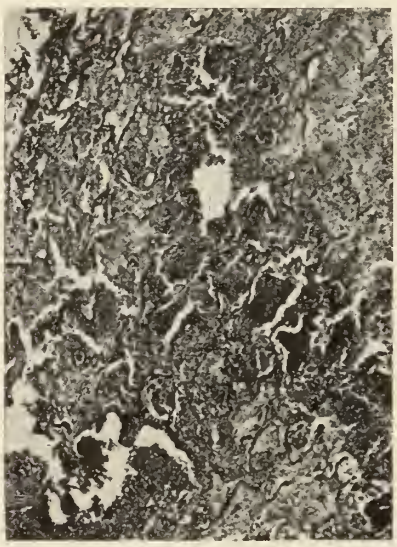


Fig. 4—Case 3

examination (Fig. 4) showed areas of alveoli which were collapsed, shrunken and filled with red cells. Other areas showed consolidation with red and white cell infiltrations.

Case 4. Mr. R. F., sixteen years of age, was admitted on February 26, 1939. He had been ill for three weeks with acute bronchitis which was subsiding at the onset of the present trouble, but was still coughing and bringing up quantities of thick greenish sputum. Chest examination revealed the diffuse sibilant and moist râles of a bronchitis. An appendectomy for acute gangrenous appendicitis was performed under ether anesthesia. Deep breathing exercises and an expectorant cough mixture were ordered. However, coughing continued and the patient complained frequently of the cough causing increased pain in the surgical area. The temperature subsided to 100 degrees the morning after the operation, but by that evening had risen to 103.2 degrees. The patient was unable to raise mucus efficiently because of pain in the abdomen on coughing. Examination of the chest after thirty-six hours revealed diminished respiratory excursion of the left side, dullness and absence of breath sounds at the left base. A film (Fig. 5) at this time showed narrowed interspaces on the left, slight rise in the left diaphragm, no change in density of the lung area and no displacement of the heart. On the fourth



Fig. 5—Case 4

day an increase in production of sputum occurred with a drop in the temperature to 100 degrees. The patient felt better because he could cough up the mucus freely without pain. Slight temperature continued with copious sputum until the patient was discharged on the tenth day. Breath sounds gradually returned with normal resonance to percussion. At no time were there signs of consolidation to suggest a pneumonic condition.

It should be noted that in none of these cases was pain referred to the chest area itself. Increased pain due to coughing occurred in the area of the surgical incision. All showed evidence of increased mucus in the upper trachea in the form of audible râles. Symptomatically the patients complained of inability to raise mucus. The condition had its onset on the second day in three patients and on the third day in one. In view of the history of three of these cases, one cannot help but feel that the high abdominal incision causing splinting of the chest, either reflexly or voluntarily or both, has mechanically interfered with the elimination of mucus with absorption of air in the obstructed bronchi. In the fourth case an acute gangrenous appendicitis necessitated an abdominal operation in the recovery stage of an acute bronchitis when there was still free expectoration

of thick purulent sputum. The strain on the heart in addition to the strain caused by the operation may be too much for the patient; it may uncover a coronary weakness, as in one of these cases, or result in myocardial failure or a secondary pneumonia. In young people with normal cardiovascular systems the prognosis is good. Within a few days large quantities of purulent sputum will be brought up followed by relief of symptoms. The condition is probably much more common than we suspect. The purpose in reporting these four cases is to call attention to the complication, because the alert practitioner will recognize more and more cases. Regular routine examinations of the chest once a day or even twice a day, during the first three or four days after operation, with confirmatory x-ray films where the lesion is suspected, will bring to light many cases, some of which are so slight they would ordinarily be overlooked.

1705 Second Avenue.

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PATENT THYROGLOSSAL DUCT

CASE REPORT

J. A. Wm. Johnson, M.D., Newton

We are told by embryologists that before the hyoid bone forms, the thyroid gland develops at the base of the tongue and descends down the midline of the neck to its normal position. This position on the tongue is marked by the foramen caecum, which also marks the beginning of the tract of epithelium through which the thyroid gland descends. The epithelium lining this tract disappears normally in early life. Occasionally the tract does not obliterate and we find remnants of thyroid tissue, isolated and referred to as aberrant thyroid glands. Sometimes cysts will develop along the tract. The portion of this tract lying above the hyoid bone often retains its epithelium and patency, thus opening into the mouth through the foramen caecum located at the base of the tongue.

It is reasonable to assume that there are secretions from this tract and that these secretions empty into the mouth through the foramen caecum. At some time or other inflammations or an obstruction to the outflow will occur; the secreted fluid settles down the tract by the aid of gravity, and we have a swelling or tumor in the midline of the neck near the hyoid bone. Cysts will form also due to pocketing of the tract. Often the tumor, visible on the anterior part of the neck, will break and leave a fistulous tract. The slowness of this process will account for the appearance of the tumor several years after birth.

My most successful method of examination, to ascertain the extent, shape and condition of the tract, was a lateral roentgenogram of the cervical region with the chin raised or extended. The patient was placed in a lateral and prone position while lipiodol was being injected through a specially prepared needle attached to a small syringe. It was necessary to exert slight pressure on the syringe during the entire time that the radiograph was being taken; otherwise the lipiodol would not show along the tract. My patient, a young woman nineteen years of age, complained of coughing up slimy material similar to that coming from an opening one inch below the hyoid bone and slightly to the left of the midline. When the patient was six months of age she had a swelling over this area which grew to be larger than a hen egg. Poultices were applied and the swelling broke. Gradual healing took place, except for a minute opening which persisted and began to discharge mucus in February, 1935.

A complete physical examination was negative with the exception of a small fistula, opening about one inch below the hyoid bone and slightly to the left of the midline. The patient was placed on the x-ray table, in the position previously described. Lipiodol was injected under continuous pressure while exposure was being made. The shadow in this case was a thready line, more or less doubled upon itself in the region of the hyoid bone and going more or less directly to the foramen caecum. It sent a branch into the middle third of the tongue and terminated in a small oval enlargement or cyst. Clinically speaking, this was apparently a thyroglossal duct. Plans for resection were made at once, and the operation was done May 11, 1935.

The sinus tract was injected with methylene blue. A transverse incision was made over the hyoid bone about two and one-half inches long. The infrahyoid portion of the duct was isolated, injected again, clamped close to the skin and divided between the clamp and the skin. The mid-

portion of the hyoid bone was freed from the muscles and removed by sawing just lateral to the portion containing the stained duct. The suprahyoid portion was freed by small scissor dissection upward to bifurcation. The anterior branch was dissected the full length; it terminated in a small cyst. The posterior branch of the duct was dissected to the mucous lining of the tongue in the region of the foramen caecum which was then ligated close to the mucous membrane. The stump was touched with carbolic acid and alcohol. The dissection included portions of the hyoid bone, portions of the raphe of the mylohyoid muscles, portions of the geniohyoid and geniohyoglossus muscles. The opening through the muscles of the tongue was closed with No. 0 chromic catgut.



Fig. 1

The ends of the hyoid bone were secured with No. 0 chromic catgut passed through the periosteum and tissues adjacent to the bone. A rubber drain was inserted deep into the muscles of the tongue fascia and the platysma was repaired with No. 0 chromic catgut. The subcutaneous fat was closed with No. 1 plain catgut. The skin was closed with No. 2 plain catgut. A sterile gauze dressing was held in place with adhesive tape.

She had an uneventful convalescence as far as healing was concerned. Because of the rarity of this malady the girl gained much newspaper notoriety as the "Fish Gill" girl by having her picture in the paper. To date there has been no recurrence. The scar is insignificant and scarcely noticeable.

THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

HEMANGIOMA OF THE SPLEEN WITH SPONTANEOUS RUPTURE

A. B. NESLER, M.D., LUKE FABER, M.D., and D. W. LEIK, M.D., Dubuque

Rupture of the spleen is not common, but does occur with sufficient frequency to be considered in every case of acute abdominal pain. In the case to be presented, it was an unexpected finding at operation upon a patient who presented the characteristic clinical picture of perforated gastric ulcer.

CASE REPORT

Chief Complaint: The patient, a white man forty years of age, was admitted to The Finley Hospital on June 11, 1939, with a complaint of "severe pain localized on the left side of the upper abdomen and about the left shoulder."

Family History: The patient's mother and father were living and well at sixty-five years of age; one sister, two brothers, his wife, two sons and one daughter were also well. There was no history of cancer, diabetes, or rheumatism in the family.

Past History: In general the patient had enjoyed excellent health and had worked every day during the past four years. In 1922 he had had an attack of jaundice for which he remained in bed three weeks. In 1924 he had been troubled with a sour stomach and could not tolerate fatty or acid foods. He obtained relief on a diet prescribed by his physician. Since that time he had had no trouble except for distress after eating foods containing vinegar. In 1931 he had a toe amputated, and in 1932 he was in the hospital for poison oak dermatitis. Specific questions on the possibility of intestinal, respiratory, cardiac, genito-urinary, or nervous diseases brought only negative information.

Present Illness: Two hours before admission and after dinner the patient developed pain in the stomach, and felt as though there was a great deal of gas in his stomach. He took a "soda and magnesia" mixture, but obtained no relief. When he laid down the pain became more severe and occurred in paroxysms at about twenty minute intervals. The pain was so severe that it caused him to double up. A provisional diagnosis of perforated gastric ulcer was made and he was sent to the hospital.

Physical Examination: The patient was a well-developed and well-nourished white man who appeared acutely ill. The eyes were negative except for pallor of the conjunctivae and slight infra-orbital duskiness. There was circumoral pallor and considerable perspiration on the upper lip. The teeth were only in fair condition; one was decayed. The chest was symmetrical; expansion was slightly lessened on the left side, possibly because of the pain in the shoulder region. The lungs were normal on palpation and auscultation. The heart beat was regular and 88 per minute. On percussion the heart was found to be within the normal limits of size, and on auscultation the sounds were normal. The abdomen was rigid and slightly globoid in contour. The patient complained of intense pain in the left upper quadrant about 4.5 centimeters from the midsternal line. The abdomen had a doughy feeling throughout, but no masses could be felt. Because of the rigidity no fluid wave could be made out. The external genitalia and rectal examinations were negative. The prostate gland was normal in size, shape and consistency. The extremities were negative and the reflexes were normally active. The urinalysis was essentially negative, except for a faintly positive acetone reaction. A white blood count was 16,000 with 78 per cent polymorphonuclear leukocytes.

Preoperative Diagnosis: Acute abdominal condition, probably a perforated gastric ulcer.

Operative Notes: Under ether anesthesia an upper right rectus, paramedian incision was made. On opening the peritoneum the cavity was found filled with bright red blood. On palpation no gastric ulcer could be felt and the hemorrhage was found to be coming from the spleen. The first incision was closed; a left paramedian one was made and the spleen was isolated. The pedicle was ligated and the spleen was removed. After removal of blood from the peritoneal cavity the incision was sutured without drainage. During the operation the patient seemed to be dying, but he responded somewhat to stimulation and to a blood transfusion of 1,000 cubic centimeters of blood and 1,050 cubic centimeters of physiologic salt solution. At the end of the operation his condition was considered extremely favorable.

Pathologic Report: Grossly the specimen was a spleen within normal limits of size and weighing 125 grams. The region of the hilum seemed normal, but on the opposite side there was a ragged rent which was covered with clots of recently shed blood. On section numerous blood spaces engorged with blood were seen in the middle two-thirds of the organ. Grossly those appeared like dilated veins filled with blood. Microscopically the sections showed large and small blood spaces lined by endothelium and with thin connective tissue walls scattered through the splenic pulp. In some parts of the sections groups of smaller blood spaces lined by cuboidal epithelium were also seen. The splenic pulp in other areas showed only acute congestion. The anatomic diagnosis was hemangioma of the spleen; spontaneous rupture with massive peritoneal hemorrhage.

Postoperative Course: The immediate postoperative shock was severe, but the patient rallied by the next day. He was given four blood transfusions amounting to 3,200 cubic centimeters of blood within twenty-four hours. For four days the temperature varied between 101 and 103 degrees, the pulse between 100 and 120 per minute. Both gradually fell and were essentially normal after the sixth day. His general condition was excellent and he made an uneventful recovery except for superficial infection of the left rectus incision. He has remained well since leaving the hospital.

DISCUSSION

Rupture of the normal spleen is usually caused by trauma, either recent or remote. Spontaneous rupture of a normal spleen has been recorded very rarely. In 1932 Dardinski[1] found only fifteen cases in the literature, and in some of these there was doubt as to the spleen being normal. Spontaneous rupture of the spleen is usually looked upon as evidence of some pathologic process in the spleen. The more frequent of these are: malaria, either naturally acquired or induced for therapeutic purposes; typhoid; leukemia; pneumonia; hepatic cirrhosis; hemophilia; tuberculosis; acute pyogenic infections (abscess of the spleen); infarction; or the presence of either a primary or metastatic neoplasm. Rupture of the spleen has also been reported as a complication of pregnancy.

Hemangiomas, as well as other primary tumors of the spleen, are extremely rare. In 1927 Krumbhaar[2] found only two cases of hemangioma in a review of 6,500 necropsies; Lubarsch[3] reported three cases in 19,000 necropsies; and Ewing[4] found records of only thirteen cases in the literature in 1928. In 1937 Schottenfeld and Wolfson[5] reported four in their series of 2,800 necropsis. Akcakoyunlu[6], in a complete review of the literature up to 1938, stated that thirty cases had been reported, but he accepted only twenty-one cases; six from necropsies and fifteen from operations.

We have found only one other example of spontaneous rupture of an hemangioma of the spleen: that of Haines and McIlroy[7]. Clinically their case was almost identical with ours, and the preoperative diagnosis of perforated gastric ulcer was also made by them. Their patient died forty-eight hours after operation. Most of the later reports on hemangioma of the spleen have been concerned with their size and surgical treatment. They have been reported at all ages, but the great majority have been encountered in patients between thirty and fifty years of age. According to Kellert[8] weights varied between normal and 7,240 grams (Akcakoyunlu).

Reports indicate that symptoms consist of a sudden onset with pain in the left lower thoracic or upper abdominal regions. This is frequently unheeded because it gradually subsides except for a dull ache in the splenic region. Sooner or later it returns and radiates to the left shoulder (Kehr's sign). On percussion there is an increasing area of dullness over the left flank (Ballance's sign), which seldom shifts when the patient shifts, as is the case in other types of intra-abdominal bleeding. This is thought to be due to more rapid coagulation of the blood from the spleen, but this was not true in our case. The diagnosis is a difficult one to make and usually it has been recognized as an acute abdominal condition requiring operation. Most often it has been confused with perforated gastric ulcer.

The treatment consists of splenectomy without drainage, blood transfusion, stimulation and hypodermoclysis to overcome the loss of blood. Drainage is not required since peritonitis rarely follows uncomplicated hemorrhage unless the operation is unduly delayed.

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SCIENTIFIC PROGRAMS OF THE CHICAGO MEDICAL SOCIETY

Because we feel that many members of the Iowa State Medical Society will be interested in attending some of the special all-day scientific sessions, recently inaugurated by the Chicago Medical Society, we will endeavor to publish each month a detailed program of the clinical presentations and the formal address, which are scheduled for that specific month. These meetings will be held on the third Wednesday of each month from now until April, with the morning and afternoon sessions at Thorne Hall, Northwestern University Medical School, and the evening assembly at the Chicago Women's Club. The program for Wednesday, November 15, is as follows:

Symposium on Nutritional Deficiency, Thorne Hall, Northwestern University Medical School

9:00 a. m. to 12:00 m.

Vitamin A Deficiency — Dr. Frederick T. Jung
Vitamin D and Calcium Deficiency — Dr. Smith Freeman
Vitamin K Deficiency — Dr. Warren H. Cole
Vitamin C Deficiency — Dr. Arthur F. Abt and Dr. Chester J. Farmer
Pellagra and Polyneuritis in Alcohol Addicts — Dr. Don C. Sutton and Dr. John Ashworth

2:00 p. m. to 5:00 p. m.

Nutritional Deficiencies During Maturity and Old Age — Dr. N. S. Davis, III
Nutritional Deficiencies During Pregnancy — Dr. Edward Allen
Nutritional Deficiencies During Infancy and Childhood — Dr. Bengt Hamilton
Anemia Due to Nutritional Deficiency — Dr. Howard L. Abt
Nutritional Deficiencies and Their Relation to Surgery — Dr. Charles B. Puestow
Normal Dietary Requirement — Dr. C. J. Barborka
Commercial Vitamin Preparations — Dr. F. C. Bing

8:30 p. m., Chicago Women's Club

Vitamin B and Pellagra — Dr. Tom D. Spies, Cincinnati, Ohio

FRACTURE CLINIC

The Third Annual Fracture Clinic of the Iowa State Medical Society, was held at the Hotel Fort Des Moines, in Des Moines, Iowa, on Wednesday, November 8, 1939. The following program was presented:

Injuries to the Foot and Ankle — Thomas L. Waring, M.D., Iowa City
Fractures of Both Bones of the Leg — James W. Graham, M.D., Sioux City
Injuries to the Knee — C. J. Lohmann, M.D., Burlington
Injuries to the Hip — G. M. Crabb, M.D., Mason City
Gas Gangrene Infections — Fred L. Knowles, M.D., Fort Dodge
First Aid Treatment of Fractures on the Battle Field — Lt. Col. John P. Beeson, Omaha, Nebraska
Fractures Into Joints — Paul B. Magnuson, M.D., Chicago, Illinois
Treatment of Compound Fractures — H. Winnett Orr, M.D., Lincoln, Nebraska

State Department of Health

Nate Dierking

Tuberculosis Control in Iowa

C. K. McCarthy, M.D., Director
Division of Tuberculosis
Iowa State Department of Health

Christmas Seals a Symbol of Hope.

Into a war-torn world embittered by hate and staggering from years of economic depression, the 1939 Christmas Seal Sale brings a symbol of universal hope and succor to a great multitude of sufferers from a dreaded disease. The Christmas Seal, with its familiar double-barred cross, is now the symbol of the fight against tuberculosis in forty-five countries of the world. In our own state of Iowa and in the United States as a whole, work done in the fight against tuberculosis by funds derived from the sale of Christmas Seals, is only a part of what is accomplished. State and county sanatoria are entirely supported by tax funds. The Christmas Seal movement, being primarily educational, has been instrumental in holding together all forces such as sanatorium workers, public health agencies and the public at large, in one great effort toward case-finding, diagnosis and treatment of tuberculosis.

Iowa Case-Finding Program.

In Iowa we have a unique case-finding program; unique in that it is sponsored jointly by the Iowa State Department of Health and the Iowa Tuberculosis Association. To date the program has enjoyed considerable success and this is mainly due to the fine cooperation of the county medical societies. Approval has been granted by seventy-one separate county medical societies up to and including October 21. It is an accepted fact that tuberculosis case-finding cannot be successfully undertaken without the cooperation and help of the general practitioner. This cooperation and help have been generously given by the physicians of this state. The Department of Health deeply appreciates the fine support given by the medical profession in Iowa to the tuberculosis case-finding program. The tuberculosis program personnel is now engaged in conducting surveys in the rural counties for the second time; the response in every county has been better than the year before. This signifies a friendly attitude on the part of the physicians as well as more interest on the part of the public.

Case Finding and Diagnosis.

A distinction is now being made between case-finding and diagnosis. In a case-finding program it is at times difficult, if not impossible, to make a diagnosis of tuberculosis from the x-ray examination alone, and a considerable amount of intensive study in a hospital or sanatorium is sometimes necessary before a diagnosis can be made. Case-finding work should really mean, therefore, the finding of cases of tuberculosis when possible, but chiefly the finding of those cases of disease of the chest which are, at times, obscure and at the same time of potential danger to the family or to the community as a whole. It is hoped that a plan may be worked out whereby those individuals suspected of having tuberculosis may be sent to the state sanatorium, when an observation period is necessary in order to make a diagnosis. This method should remove some of the fears which come to patients who have been told there is pathology in the lungs. It should also be possible by this method to obtain diagnostic facilities for other diseases of the chest in which the diagnosis is sometimes difficult.

Industry and Tuberculosis.

Industrial groups will often yield a considerable number of cases of tuberculosis, hitherto unknown. When discovered, the remaining members of these families should be examined carefully for other infected persons. Hence, the case-finding program embraces more than diagnosis. It

goes farther and selects groups, such as families, as objects of even more extensive work.

The Attending Physician and Tuberculosis.

Tuberculosis case-finding has brought forward a new problem to the private physician. He is now faced with the problem of advising and caring for patients who have pathologic conditions which have not yet affected their feeling of well being.

A fair number of cases found under case-finding methods have been in contact with a case of tuberculosis, have been infected and because of this contact have been found and examined before symptoms have appeared. This is the type of case which derives the most benefit from treatment. It is also the case most difficult to get under treatment. Since he does not feel ill, the patient cannot be made to understand that treatment is nevertheless necessary. Again we must turn to the family physician for help. Who else is so well qualified to break the news of such a diagnosis as the tried and true "family doctor"? The general practitioner also finds tuberculosis incidentally, in his search for other pathology. The success of measures directed at disease of any kind is dependent upon the support of the general practitioner. This support has been generously given in this state and will continue to make Iowa "A Healthy State and a Happy People."

The accompanying map shows the various counties and their positions in relation to the Cooperative Tuberculosis Control Program, sponsored jointly by the Iowa State Department of Health and the Iowa Tuberculosis Association.

COMMUNICABLE DISEASE PREVALENCE IN OCTOBER

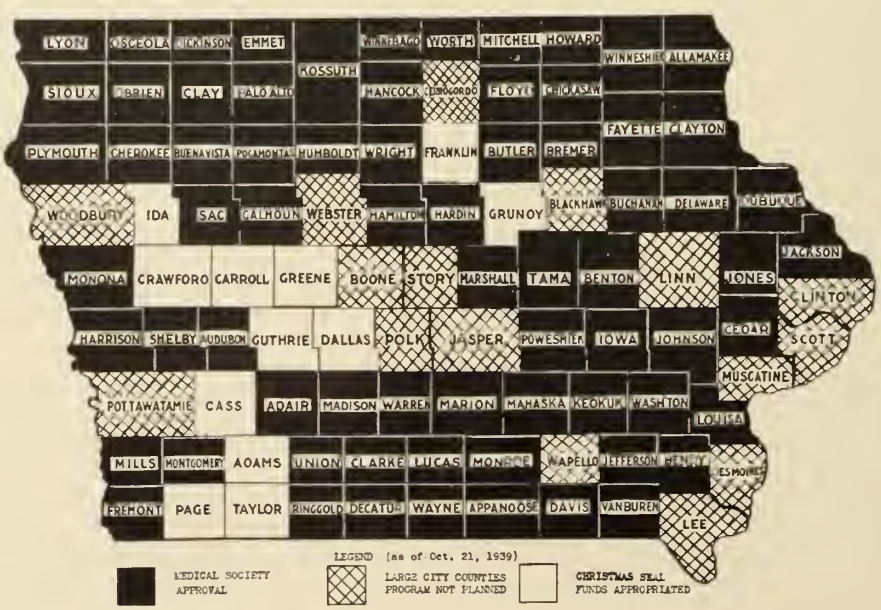
The following table presents figures indicating the expected number of cases and the number officially reported for eight communicable diseases during the month of October (through the twenty-eighth):

Disease	Expected No. of Cases	Reported No. of Cases
Diphtheria	73	33
Measles	12	25
Meningococcic Meningitis	4	3
Poliomyelitis	18	54
Scarlet Fever	225	225
Smallpox	18	11
Typhoid Fever	27	12
Whooping Cough	69	53

In the above table the figure representing the expected number of cases for each disease is the average for October, based on total reports for this month during the nine-year period from 1930 to and including 1938. Figures in the right hand column represent the total number of cases actually reported during the first twenty-eight days of October. Diseases showing less than usual or expected prevalence (through the twenty-eighth) were diphtheria, meningococcic meningitis, smallpox, typhoid fever and whooping cough. Measles showed a slight increase over expected prevalence. Poliomyelitis showed unusual occurrence in October, the fifty-four officially reported cases exceeding by three times the expected number of reports.

(Concluded on page 584)

COOPERATIVE TUBERCULOSIS CONTROL PROGRAM



The JOURNAL of the Iowa State Medical Society

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THE EPIDEMIOLOGY OF POLIOMYELITIS

The epidemiology of poliomyelitis, a distinctly seasonal disease, is still an unsolved problem, but there have been valuable observations in the last few years which contribute to the knowledge concerning the spread of this disease.

It has been a generally accepted hypothesis that the route of infection of the virus was from the nasopharynx along the first nerve and the olfactory bulb to the central nervous system. The prophylactic use of alum spray was employed on the premise that this hypothesis was sound. However, some research workers have questioned the validity of this route of infection. Toomey of Cleveland is staunch in his opposition, and contends that the gastro-intestinal portal of entry is much more probable.

Autopsies performed on individuals who have died as the result of poliomyelitis have generally failed to reveal lesions in the olfactory bulb, intimating that in the human disease, some other portal of entry exists. The accidental inoculation of children, when vaccine was being used, indicates that a subcutaneous route can operate in human poliomyelitis. Poliomyelitis virus can be readily isolated from the stools of patients during the acute and convalescent stages of the disease, and according to Trask this finding is so striking that it becomes almost necessary to consider poliomyelitis as an "intestinal disease". In support of his contention autopsies have revealed lesions in the intestinal tract, and virus has been recovered from mesenteric lymph glands. Paul and Trask demonstrate that it is twice as easy to isolate the virus from the stools as from the nasopharynx, but that the virus is more easily recovered from the mild abortive cases than from the paralytic cases. Inasmuch as the mild non-paralytic cases outnumber the paralytic cases approximately eight to one during an epidemic, the incidence of carriers during periods of epidemic poliomyelitis must be very high.

The seasonal appearance of poliomyelitis in summer and early autumn has never been satisfactorily explained. Various insects have been suspected in the transmission, but the fact that the virus has never been recovered from the blood stream at any stage of the disease seems to preclude this method of spread. Similar summer diseases involving the central nervous system, St. Louis encephalitis, Japanese B. encephalitis and equine encephalomyelitis, are thought to be mosquito-borne. It is possible that, from continued studies of these diseases, we may learn more about poliomyelitis. Another explanation of the seasonal incidence of poliomyelitis is the analogy to typhoid fever, the presence of the virus in the stools and gross contamination of sewage. According to Paul and Trask, stool suspensions are stable media for preservation of the virus, remaining viable for months.

The brief for poliomyelitis being an intestinal disease is presumptive, of course, at the present time, but it does offer a new approach to the epidemiology of a disease, the transmission of which is still a mystery.

MEDICAL FACILITIES: PHYSICIANS

As stated previously, the Journal is glad to assist the Bureau of Medical Economics of the American Medical Association, in extending the scope of its two recent publications which contain certain factual data and reports of utmost importance to the physicians of the country at this time. Editorials in the September and October issues of the Journal covered "Care of the Indigent"; this discussion will concern factual data on medical facilities of the United States from the standpoint of physicians; and the December issue will include a presentation of the hospital facilities of the United States.

The number of physicians in the United States is greater by approximately 19,000 than the combined number of physicians in Great Britain, Germany, Austria (now a part of Germany), France, Poland, Denmark, Sweden, Norway, Switzerland, Belgium and Holland, despite the fact that the combined population in these eleven countries exceeds the population of the United States by 90,000,000. In 1900 the population per physician in the United States was 636; in 1938 it was 767. If one considers no other factor but the improvement in transportation and communi-

cation which has occurred in this period, it is obvious that medical service is far more available now than it was forty years ago. However, the improvement has not been limited to transportation and communication. The training and equipment of physicians, together with such auxiliary personnel and facilities as nurses, dentists, technicians, hospitals and laboratories, to assist the physician in furnishing medical care, have shown a corresponding improvement. European authorities have stated that one physician for every 2,000 persons is sufficient. Sweden, often cited as having a model medical service, has one physician for about every 2,000 persons.

POPULATION PER PHYSICIAN IN CERTAIN COUNTRIES*

Country	Population per Physician
United States†	767
Austria	837
Canada	1,045
Great Britain	1,069
Germany	1,307
Denmark	1,346
Holland	1,417
Belgium	1,460
France	1,596
Sweden	2,660
Poland	3,100
Yugoslavia	3,450

*Rev. Internat. de méd. profess. et sociale, v:109 (May) 1932.
†American Medical Directory, 1938.

In 1936 there were only 241 counties in the United States with more than 2,000 persons per physician. This is a more equitable distribution of physicians than is to be found in any of the older and more thickly settled countries of Europe. While the population per physician in smaller cities and rural communities is fewer than in large cities, the amount of medical care received is by no means accurately measured by the ratio of physicians to population. Trains, automobiles and airplanes today can bring patients a hundred or even a thousand miles to specialists and modern equipment more easily than the patient of a generation ago could be carried in a horse-drawn conveyance over dirt roads to a physician ten miles away. The supply of physicians in rural districts is far better in the United States than in any country with sickness insurance or some other type of state medicine. Residents of towns, villages and rural districts are no longer dependent solely on local physicians for specialist's services and hospital care. Their family physician can and does give them the best service provided by any body of general practitioners in the world, and he also knows when and how to obtain the special care required for those cases which are beyond his competence.

POPULATION PER PHYSICIAN IN THE UNITED STATES* ACCORDING TO SIZE OF COMMUNITY FOR THE YEARS 1906, 1923 AND 1931

Size of Community	Population per Physician 1906	1923	1931
Less than 1,000	997	1,338	1,602
1,000— 2,499	590	910	1,265
2,500— 4,999	557	749	1,023
5,000— 9,999	604	688	927
10,000—24,999	571	721	774
25,000—49,999	530	647	714
50,000—99,999	597	628	661
100,000 and over	492	536	530
United States*	675	763	823

*Excluding New England States.

In 1900 there were 160 medical schools in the United States with 5,214 graduates. In 1938 the number of medical schools was only 77, but the number of graduates was approximately the same, 5,194. This decline in the number of medical schools during the present century represents the deliberate elimination of low grade schools. This elevation of the standards of medical education tends to protect the public of the United States against treatment by physicians who are inadequately prepared, and gives reasonable assurance that the person who chooses any licensed physician will receive the services of a practitioner who has been given the highest type of medical training available anywhere in the world.

The fears of some people that the day of the general practitioner in America is on the wane should be effectively quieted by reference to the American Medical Directory for 1938. According to this source, 127,733 or 79.2 per cent of the physicians of the United States are listed as being in general practice, while only 33,618 or 20.8 per cent are classified as specialists. The bulk of medical knowledge today is far too great to be mastered by any one individual. If medical service to the public is to include an appropriate application of the entire field of medical knowledge, then there must be available the services of a certain number of physicians who are skilled in particular fields of medicine. At the present, a smaller percentage of the medical profession in the United States are specialists than in most foreign countries for which information is available. Whether or not this indicates a proper percentage of specialists in this and other countries is a question which cannot be answered categorically.

Until recent years there were few definite standards which a physician was required to meet before he was entitled to present himself to the public as a specialist. Specialty boards for thirteen of the special branches of medical practice are now organized and have been approved. These boards

have established standards of medical education and experience, and conduct examinations of candidates to determine their qualifications for recognition as specialists by the profession and the public.

HOSPITAL SERVICE, INCORPORATED, OF IOWA*

Many inquiries have recently been received in the central executive office concerning the new insurance company in Iowa. It is now incorporated under the new enabling act; it plans to open offices in Des Moines on November 1, 1939, and will expect to issue policies beginning December 1, 1939. Progress has been slow, but it has been necessary to spend a great deal of time and study to prevent making mistakes which have caused trouble in similar companies elsewhere. A representative of the organization was sent to the headquarters of four of the leading companies in the country where he received valuable advice which will be of inestimable aid in avoiding costly mistakes in the future. The board at present is composed of directors of the Iowa Hospital Association with three members appointed by the Iowa State Medical Society. Provision has also been made for a Medical Advisory Committee which will deal with all questions of a medical nature. This committee will also assist in settling any possible differences which might arise between the medical profession and the company. The officers and directors of the company are anxious to conduct the plan along lines which will meet with the approval of the medical profession of the state.

Much of the success of this company will depend on the wholehearted cooperation of the physicians of Iowa. The necessity and length of hospitalization is to be determined solely by the physician caring for the patient. Possession of a contract with the company should not be a determining factor in sending a patient to the hospital. The patient should be discharged as soon as, but no sooner than, his condition warrants. This decision will be in the hands of the attending physician and the company does not anticipate making any effort to control the stay in the hospital. Another important item is that this policy does not cover charges for anesthesia or x-ray examinations, since these are assumed to be medical services and not properly covered by the heading of hospitalization.

The contract for hospitalization will be available to the medical profession as well as other groups. Since the contracts will be sold only in groups it will be necessary for the doctors to enroll as groups. However, the individual doctor, with his office assistant and nurse, may form a group. The county medical society may form a group and its members enroll as a unit. The physician may include in his policy his wife and any children under the age of eighteen years. The exact benefits available under the policy, the rates charged, and other matters of similar nature will be issued soon in booklet form and will be made available to the members of the Iowa State Medical Society at once. It has been suggested that members of hospital staffs should secure these policies, and that the hospitals should then cease giving courtesy services to staff members and their families.

During the third week in November the Iowa Hospital Association will hold meetings in four localities throughout the state to present the plan to the hospitals in these districts. Evening meetings will be held at each of these centers with the members of the medical profession to acquaint them with the details of the plan. Information as to the location and time of these sessions will be mailed to individual physicians in the near future. Although this company is being organized by the Iowa Hospital Association, it has been done with the assistance and advice of various committees of the Iowa State Medical Society acting under the direction of the House of Delegates. We, as a society, are interested in the success of the plan, and we can do much to insure this success by becoming contract holders ourselves and by recommending it to our patients. The careful and painstaking work of those who have developed the plan assures the establishment of a sound ethical organization which will provide a much needed service to the people of Iowa.

*From the Medical Economics Committee.

COLLECTION AGENCIES*

The Medical Economics Committee has received several letters from physicians reporting unsatisfactory relations with collection agencies. For a number of years your committee has attempted to persuade doctors to deal only with those agencies which have been investigated and approved by it. Any reputable collection firm can, by filing its application with samples of contracts and evidence of satisfactory relations with physicians over a period of time, receive the approval of the society through this committee. In return for this approval the company agrees to submit any difference it may have with doctors in Iowa to the Medical Economics Committee for arbitration and to abide by the decision of the committee. Ap-

*From the Medical Economics Committee.

proved companies are given cards which are to be carried by each of their salesmen and produced at the request of the client solicited.

One company seems to have a representative working in the northern half of the state. He contacts the doctor and secures the list of accounts for collection. In one case he showed a card which he stated was signed by the chairman of the Medical Economics Committee, but such a card has never been issued to that company. The contract, which is contained on the sheet of paper on which the doctor writes his list, should be read carefully. It gives the company full right to use any method of collection without consultation with the doctor; to settle claims in any way it sees fit; to accept notes or other instruments and to discount them in any way; and to sue when the company desires. The doctor agrees to remit the commission on any money paid to him direct, on the day received, but the company makes no agreement to pay at any time. From the first collections on any accounts the company retains one dollar for each account listed, in addition to the fifty per cent fee. If an account is $2.00 the company retains the $2.00; if it is $3.00 the company keeps $2.50. Even a cursory reading of this contract should make the doctor realize that the company cannot possibly be desirous of giving satisfactory services. If such a contract is once signed, the doctor may well forget the accounts. Any action the company takes will be found to be within its legal rights according to the contract. If the doctor tries to withdraw the accounts, or orders collection stopped, he is then liable to the company for the full commission on those accounts, just as though they had been collected in full.

The other agency is working in the southern and western portion of the state, with a branch office in Council Bluffs, and headquarters in California. This representative claims that his company is handling the actual collection for a certain named ethical and successful agency in the state, but inquiry reveals it is not connected with the reliable company in any manner. This salesman drops into the prospective doctor-client's office with the statement that he has a debtor in Council Bluffs who is going to refinance all his bills and owes one to the doctor; if the doctor will turn it over, it will be paid in full. Investigation reveals that the doctor has no such an account and the salesman then states he must have the name wrong and will write the company for further information. In the meanwhile he would like to have some of the doctor's other accounts for collection. This salesman recently came to the office of the chairman of the Medical Economics Committee and made his plea for accounts. On inquiry, he stated that he had received a card of approval from the Iowa State Medical Society; however, he was unable to find the card. Upon being told that the doctor he was interviewing was the one responsible for signing those cards he beat a hasty retreat. Earlier he had used the same method of gaining access to offices of dentists, doctors, and undertakers in the town.

Many difficulties would be avoided if the physician, when approached by a collection agency representative, would ask for the card of approval. If the card is presented it would be wise to call the Iowa State Medical Society office in Des Moines and confirm the information, since at least one man has a facsimile of our approval which is not genuine. Very few companies have received our approval. If a contract is contemplated, it should be studied carefully, and an attorney's opinion might prove advisable at times. One should watch for the various clauses which give the company all the rights and the doctor none. Specific bad features are contracts with filing fees; those which give the company right to sue without permission of the doctor; and those which do not obligate the company to make settlement at definite intervals. Above all, one should remember that any verbal agreement of the agent as to methods of collection, payments, or other matters are not binding on the company; only the written contract is considered legally binding.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Meeting of Executive Cancer Committee
October 8, 1939

The Executive Cancer Committee of the Iowa State Medical Society met at the Hotel Fort Des Moines in Des Moines, Sunday, October 8, at two p. m. Those present included the members of the Committee: M. C. Hennessy of Council Bluffs, W. H. Gibbon of Sioux City, H. W. Morgan of Mason City, D. F. Ward of Dubuque, and A. W. Erskine of Cedar Rapids; and Mrs. A. V. O'Brien of Iowa City, Commander of the Women's Field Army; E. D. Plass of Iowa City, and Robert L. Parker of Des Moines.

The payment of routine bills was approved, as was the sending of thirty per cent of the funds raised in the 1939 campaign to the American Society for the Control of Cancer. Drs. M. C. Hennessy, D. F. Ward, and H. W. Morgan were chosen to serve on the Executive Board of the Women's Field Army. Plans for the coming year were discussed, and it was decided to invite a representative from the national office to meet with the Committee to plan a cancer program for Iowa. Dr. Plass reported on the present status of the cancer manual, and the meeting adjourned at 2:30 p. m.

Medical Profession Works With Red Cross



One disaster every three days. That is the average for the Red Cross during the past several years. Sometimes resources of the local chapters are sufficient to cope with the resultant problems; at other times the entire nation assists the Red Cross to furnish relief to the victims.

In all disaster operations the nation's doctors have loyally cooperated with the Red Cross. When a tornado struck Anoka, Minnesota, last June 18, it was only a short while later that contingents of doctors and nurses, raised by the Red Cross chapters in St. Paul and Minneapolis, moved into the disaster area to tend the injured. When the Ohio and Mississippi river basins were flooded in 1937 it was due to the excellent cooperation of doctors and health authorities that the public health was well maintained despite chaotic conditions.

In its experience the Red Cross has found that certain types of disaster require the services of those schooled in first aid much more than do others. Windstorms of great intensity, such as tornadoes, cyclones and hurricanes always leave many injured by flying debris, buried or pinned by the wreckage of homes and other buildings, and struck by falling objects.

For these reasons many chapters when organizing disaster preparedness committees make prominent provision for medical, nursing and first aid contingents. To the doctors and nurses are assigned the tasks of treating the sick and injured as they are brought in; to the first aiders are given the responsibilities of searching ruins for the injured, rescuing them and providing emergency care on the spot, pending their removal to the more central locations where they come under professional medical care.

Since 1935 the Red Cross has been actively fostering first aid along the nation's highways. Today, from coast to coast, there are more than 5,400 fixed stations and mobile first aid units, staffed by men and women who have been trained by the Red Cross in giving emergency care to the injured. Each of these volunteers has been impressed with the fact that his service does not take the place of medical assistance, that he is to act only until the arrival of professional aid, and each one, to the best of his ability is rendering a service which may mean the difference between life and death, permanent disability and complete recovery.

Mobile first aid units are automobiles and trucks, generally operated by large fleet owners, such as state highway departments, police patrols, public utility concerns and others. On the highway at all times, often in the vicinity of accidents and, in the case of police patrols, sent out specifically to investigate such mishaps, these mobile units have time and again rendered signal service.

Illustrative of the work these first aiders may be called upon to do is the case of a garageman from Salem, Ohio, who went out with his towing truck in the middle of the night. Because of darkness, the garageman accidentally walked into a live wire and 11,000 volts shot through his body. Fortunate, indeed, it was that among those present was a corporal of the Ohio State Highway Patrol, all members of which are trained in Red Cross first aid. At considerable personal risk the corporal removed the body from the live wire, and then administered artificial respiration by the prone pressure method. After six minutes the man began to show signs of returning life and sometime later he was sufficiently restored to be moved to a hospital where he recovered completely.

Red Cross first aid stations in Iowa number 73, while mobile emergency units aggregate 133. All are appropriately marked with signs or plaques and the attendants and crews are ready to assist at any time.

During the coming months many Red Cross chapters will be engaged in the production of goods for the benefit of war sufferers in Europe. Because of this, and in order to maintain all existing peace-time Red Cross services, it is planned to enlist at least 1,000,000 new members during the forthcoming Roll Call which will be held from November 11 to 30. Many of these members will aid their chapters in volunteer work. The dues of all will be used to finance the increased activity of the organization. Now as never before in years, does the Red Cross need the cooperation of all, to serve humanity most effectively.

Lipoid Pneumonia*

JAMES E. KAHLER, M.D., Pathologist
Iowa Methodist Hospital
Des Moines, Iowa

The popular conception that lipoid pneumonia is a rare disease is unfortunately in error. Although its occurrence can be prevented almost entirely, increasing numbers of cases are being reported each year. Most of these are not diagnosed during life because of the insidious onset, the afebrile course and the absence or paucity of lung signs and symptoms. Approximately two-thirds of the recorded cases are in children, the remainder in adults and the aged.

Lipoid pneumonia occurs usually in one of four classes of cases: first, patients of any age with some central nervous system involvement (meningitis, brain tumor, coma, etc.); second, patients, usually small infants, with debilitating diseases or those in which repeated vomiting occurs; third, patients to whom oils (cod liver oil, etc.) are given against resistance; and fourth, patients, usually adults, who use oils over long periods of time as nasal douches, laryngeal sprays and lubricants. In the first group of cases, the patients are for the most part supine, their cough reflexes are diminished and periods of unconsciousness are the rule. In this group may also be placed patients who have been immobilized for long periods of time in plaster casts. Oils administered with or as food, or as laxatives may readily reach the trachea. In the second group are those cases in which feeding by gavage is frequently necessary, and relatively large amounts of oil-soluble vitamins are essential. In the third group belong children, most of whom are healthy and who resist the administration of an unpalatable oil. In these children, pinching of the nose to force swallowing of the mouthful of oil often permits a portion of the fat to enter the trachea. In the fourth group, are adults who inspire inhalants with oily base, practice nasal douching with mineral oil, and fill trachectomy tubes with oil to prevent injury to the mucous membrane. The slight anesthetic action of menthol and similar compounds probably aids in the passage of some of this oil into the larynx and trachea. Experimentally, lipoid pneumonia has been produced by injecting small amounts of oil into the mouth, nose or pharynx.

Another factor which enters into the development of lipoid pneumonia is the type of oil inspired. These may be grouped into three classes: vegetable oils (lipiodol, olive oil and chaulmoogra oil); animal oils (milk fat and cod liver oil); and mineral oil. Each group of oils produces a different type of reaction which further varies, depending upon concommitant aspiration of virulent bacteria. In general, the vegetable oils produce the least reaction. Lipiodol, used commonly for radiographic purposes, seldom excites untoward results, although two cases of lipoid pneumonia have been reported from its use. In each of these, some secondary factor caused the permanent retention of the oil in the lungs. Chaulmoogra oil, on the other hand, produces an immediate hemorrhagic and necrotizing response both in the trachea and in the lung tissue. All of the animal oils produce a marked reaction of an exudative type. Mineral oil acts in the lung as a foreign body. It is readily emulsified and produces a granulomatous response.

The usual reaction to any of these oils may be altered by superadded infection. A neutral vegetable fat may carry with it into the lung, infective material, which will give rise to subpleural abscesses. Milk fat, aspirated as vomitus and thus mixed with varying amounts of infectious material, will produce both the ordinary monocytic reaction and an acute septic type of pneumonia.

The gross and microscopic appearance of the lesions varies with the oil involved. A neutral vegetable oil, such as lipiodol, produces a small amount of mechanical edema and hemorrhage. If it is not quickly expelled, a mild degree of macrophage reaction occurs and small rubbery nodules are palpable within the lung substance. With animal oils, such as cod liver oil and milk fat, the gross appearance is similar to that of bronchopneumonia with these exceptions: the pleural surface remains smooth, the tissue has a rubbery rather than a firm consistency, and the cut surface is more yellow. Droplets of oil may be seen on the cut surface and at times the characteristic odor of the oil may be sensible. Microscopically, animal oils produce an immediate exudation of red blood cells, serum and fibrin which is soon over-

* This is the second of a series of articles prepared by Dr. Kahler at our request. The first article appeared in the October issue of the Journal.

shadowed by an outpouring of monocular phagocytes. The latter, with the engulfed oil, return to the alveolar wall, greatly expanding it, and enter the lymphatics. The width of the alveolar wall often exceeds that of the alveolar lumina. The bronchioles are filled with pus but contain no fat. Later in the process, extensive interstitial and peribronchial fibrosis occurs. Mineral oil pneumonia is characterized grossly by the production of nodules which may reach three centimeters in diameter, resembling primary or metastatic tumor masses. The pleural surfaces are reddish pink. The cut surface of the nodules is yellowish-white and on pressure, yellowish plugs of exudate may be expressed. These nodules may be sharply demarcated from the surrounding tissue or blend gradually with it. Microscopically, mineral oil is readily emulsified which causes an exudation of mononuclears and giant cells with an accompanying fibroblastic reaction resulting in the formation of granulomatous masses. In large masses of this sort, the lung tissue is entirely replaced in the center by fibrous tissue, and at the periphery the alveoli are filled with oil contained within macrophages or surrounded by giant cells. These large masses may occur within the lung field or at the periphery, and roentgenologically may simulate tumors; but unlike the latter, will slowly diminish in size if additional oil does not reach the lung. Some fat eventually reaches the hilar lymph nodes which become enlarged. In longstanding processes, calcification may occur and the lesions may simulate tuberculosis. However, calcification only occurs in the lung field lesions and not in the hilar nodes. Cavitation has not been observed in lipoid pneumonia. The lesions are frequently bilateral but most marked on the right and tend to be posterior.

From the clinical laboratory, little assistance can be given in reaching the diagnosis. The blood count and urinalysis will reveal no abnormalities in uncomplicated cases. It would seem reasonable to suppose that examination of the sputum would reveal diagnostic oil globules or fat laden phagocytes. However, fat globules may appear in sputum preparations from other sources than the lung parenchyma, and macrophages containing fat (the lipoid resulting from the breakdown of polymorphonuclear leukocytes and other debris) are seen in all types of pneumonias.

The fatal termination of lipoid pneumonia is the result of the aspiration of overwhelming quantities of oil or of a septic complication. In uncomplicated cases, the oil is removed in time by expectoration or phagocytosis, or is rendered inert by encystment.

SULFANILAMIDE IN THE TREATMENT OF TUBERCULOSIS*

Recent reports that sulfanilamide has proved beneficial in the treatment of tuberculosis drew a warning today from the National Tuberculosis Association. The association called attention to a report in the current issue of The American Review of Tuberculosis on sulfanilamide and tuberculosis. Here the serious consequences which might ensue if tuberculosis sufferers take sulfanilamide compounds for the treatment of this disease are emphasized by Dr. H. J. Corper, research director of the National Jewish Hospital of Denver, Colorado. The report was prepared by Dr. Corper and his two associates, Maurice L. Cohn, Ph.D., and Clarence Bower, Ph.D., on the basis of findings at the Denver Hospital.

Results of their tests do not mean that a patient with tuberculosis who has developed pneumonia or streptococcus infection cannot use the drugs as prescribed for those conditions, but that the use of the drug should be confined to the treatment of pneumonia and streptococcus infections.

"The tests have demonstrated," said Dr. Corper in summarizing the survey, "that the utmost caution is required in evaluating the action of the drugs in tuberculosis.

"When given for a short time to man and animals, sulfanilamide and similar drugs are not evidently poisonous, but, if given over an extended period, become profound blood and cell poisons.

"It is these effects which have led to the erroneous deductions. The animal that is poisoned from the prolonged use of large amounts of sulfanilamide and allied drugs, such as sulfapyridine, cannot produce tubercle cells in certain organs as readily as ordinary tuberculous animals do, and so two things happen.

"In the first place, a deception occurs in that these organs only appear to have less tuberculosis; secondly, but even more important, since the tubercle cells are the ones that actively fight tuberculosis and help maintain the health of the individual not treated with sulfanilamide, the injury of these organ cells as well as the blood cells actually is harmful to the patient, rather than an aid in fighting his tuberculosis.

"This should serve as a timely caution to save the tuberculous from unnecessary injury from the use of drugs until they are exactingly tried out in the research laboratory on test animals and by competent analysts. This is especially urgent in an involved and intricate disease problem such as tuberculosis presents and in which all the phases must be thoroughly understood before conclusions as to the value of the drug for man can be drawn.

"These compounds (sulfanilamide and sulfapyridine) do not affect tuberculosis but injure body cells, the reacting cells."

*News Release from the National Tuberculosis Association.

SPEAKERS BUREAU ACTIVITIES

POSTGRADUATE COURSES GREAT SUCCESS

Four regular postgraduate extension courses culminated November seventh after six consecutive weeks of outstanding instruction. The highest enrollment attained for any one course was reached in the Third Councilor District at Sheldon, where fifty-eight physicians responded to their chairman's solicitation. The mark set a new and unestablished postgraduate course attendance record for the northwestern corner of the state, and the Speakers Bureau is extremely grateful for this splendid showing. We are also pleased with the weekly comments which have reached us from all districts where courses were held. Reports from attending physicians indicated that in every instance the lecturers proffered their discussions in an able and beneficial manner for the general practitioner.

With a view toward stimulating interest in future programs, we are submitting below the names of physicians who enrolled for the fall postgraduate instruction in the Second, Third, Fourth and Tenth Councilor Districts. It is our hope that fellow members who failed to attend any lectures this fall will register for one of the spring schedules which will begin after the first of the year.

Second District
Algona

E. D. Beatty, Mallard
C. E. Birney, Estherville
H. L. Brereton, Emmetsburg
C. O. Brewster, Britt
J. G. Clapsaddle, Burt
R. L. Corbin, Luverne
C. H. Cretzmeyer, Algona
F. X. Cretzmeyer, Emmetsburg
G. F. Dolmage, Buffalo Center
G. H. Dolmage Buffalo Center
M. M. Donnelly, Mason City
A. H. Dulmes, Klemme
T. G. Egan, Bancroft
H. E. Fiel, Buffalo Center
L. W. Eller, Kanawha
R. A. Evans, Algona
W. E. Gower, Pocahontas
C. V. Hamilton, Garner
W. F. Hamstreet, Titonka
J. E. Houlahan, Mason City
P. V. Janse, Algona
A. E. Jensen, Humboldt
A. L. Judd, Kanawha
G. H. Keeney, Mallard
J. N. Kenefick, Algona
E. E. Lashbrook, Estherville
L. K. Leserman, Rolfe
J. W. McCreery, Whittemore
R. M. Minkel, Swea City
H. W. Morgan, Mason City
J. A. Mueller, Fenton
P. O. Nelson, Emmetsburg
H. R. Powers, Emmetsburg
D. F. Shaw, Britt
I. T. Schultz, Humboldt
N. E. T. Schultz, Humboldt
R. E. Smiley, Mason City
L. R. Turner, Renwick
R. M. Wallace, Algona
R. L. Williams, Lakota
L. R. Woodward, Mason City

Third District
Sheldon

W. S. Balkema, Sheldon
E. J. Bild Doon
C. C. F. Bosch, Melvin
W. R Brock, Sheldon
S. A. Carnazzo, Le Mars
C. E. Collester, Spencer
T. E. Corcoran, Rock Rapids
J. E. Dahlbo, Sutherland
G. M. DeYoung, George
Wm. Doornink, Orange City
W. L. Downing, Le Mars
H. H. Ennis, Le Mars
E. P. Farnum, Sibley
R. J. Fisch, Le Mars
J. J. Galman, Hospers
E. B. Getty, Primghar
T. J. Glasscock, Hawarden
D. J. Gleysteen, Alton
E. B. Grossman, Orange City
W. C. Hand, Hartley
L. R. Hegg, Rock Valley
G. G. Henning, Milford
L. H. Heetland, Sibley
C. H. Johnson, Cherokee
T. D. Kas, Sutherland
A. L. Lock, Rock Valley
C. Maris, Sanborn
W. Maris, Sioux Center
G. Maris, Hull
L. H. Mattice, Sutherland
S. T. Moen, Hartley
M. T. Morton, Estherville
C. B. Murphy, Alton
K. W. Myers, Sheldon
F. F. Null, Hawarden
C. D. Oelrich, Sioux Center
G. C. Oldag, Paullina
F. B. O'Leary, George
L. C. O'Toole, Le Mars
L. L. Parke, Canton, So. Dakota
H. B. Paulsen, Harris
E. Pfeiffer, Hartley
F. L. Roberts, Spirit Lake
C. A. Samuelson, Sheldon
C. L. Samuelson, Paullina
P. A. Scott, Spirit Lake
H. W. Schoon, Sibley
A. P. Stewart, Inwood
T. W. Swallum, Spencer
C. S. Van Ness, Peterson
G. E. Vermeer, Sheldon
J. A. Wagner, Primghar
T. L. Ward, Arnolds Park
N. E. Weems, Paullina
F. P. Winkler, Sibley
J. H. Wise, Cherokee
R. F. Wolcott, Spirit Lake
A. C. Wubbena, Rock Rapids

Fourth District
Storm Lake—Sac City

R. E. Almquist, Albert City
L. B. Amick, Sac City
G. W. Anderson, Early
M. A. Armstrong, Newell
G. H. Bassett, Sac City
F. L. Blair, Jr., Lytton
A. A. Blum, Wall Lake
L. A. Carlson, Lake City
S. J. Deur, Lake View
J. R. Dewey, Schaller
W. I. Evans, Odebolt
H. E. Farnsworth, Storm Lake
M. W. Grubb, Galva
R. R. Hanson, Storm Lake
C. W. Ihle, Cleghorn
D. C. Koser, Cherokee
R. E. Mailliard, Storm Lake
J. J. McAllister, Odebolt
J. J. McCarl, Sac City
M. J. McVay, Lake City
H. N. Neu, Sac City
J. H. O'Donoghue, Storm Lake
E. S. Parker, Ida Grove
L. H. Peek, Lake City
G. H. Swearingen, Sac City
T. H. Van Camp, Breda

Tenth District
Corning—Creston—Osceola

W. F. Amdor, Carbon
G. J. Anderson, Winterset
G. I. Armitage, Murray
C. A. Ayres, Lorimor
C. L. Bain, Corning
F. Bates, Osceola
A. S. Beatty, Creston
H. G. Beatty, Creston
F. Binder, Corning
H. N. Boden, Truro
A. S. Bowers, Orient
A. W. Brunk, Prescott
C. R. Harken, Osceola
E. Sexsmith Harper, Greenfield
O. B. Hawley, Corning
J. W. Hill, Mt. Ayr
J. A. Liken, Creston
J. G. Macrae, Creston
E. M. Olson, Winterset
M. R. Paragas, Creston
C. C. Rambo, Creston
C. B. Roe, Afton
F. E. Sampson, Creston
C. E. Sampson, Creston
F. W. Sells, Osceola
E. E. Shaw, Indianola
H. E. Stroy, Osceola
J. H. Wallahan, Corning
E. J. Watson, Diagonal
A. F. Watts, Creston

The complete enrollment list for the course which is being conducted in the First Councilor District is not available at this time, due to the fact that the meetings are being held on a bi-monthly basis and the registration cannot be determined until the termination of the series of lectures in December. Physicians who have enrolled thus far are as follows:

First District
Charles City—Decorah—Oelwein

O. H. Banton, Charles City
L. L. Carr, Clermont
C. H. Cords, Rudd
R. A. Fox, Charles City
E. F. Hagen, Decorah
B. A. Hall, Maynard
C. C. Hall, Maynard
C. M. Hazard, Arlington
F. A. Hennessy, Calmar
V. J. Horton, Calmar
M. F. Kiesau, Postville
A. F. Kober, Charles City
L. E. Larson, Decorah
C. W. McQuillen, Charles City
C. D. Mercer, West Union
J. B. Miner, Jr., Charles City
J. E. Murtaugh, Decorah
J. D. Parker, Fayette
J. N. Smittle, Waucoma
T. N. Stabo, Decorah
P. E. Stuart, Nashua
H. A. Tolliver, Charles City
L. S. Wentworth, Marble Rock

MARSHALLTOWN POSTGRADUATE COURSE ENDS

December 5 will bring to a close the series of monthly postgraduate meetings in Marshalltown which began last January. Physicians in the center and surrounding territory who have enjoyed the nine months of instruction are:

E. M. Barnes, Gilman
G. A. Biebesheimer, Reinbeck
B. M. Biersborn, State Center
G. A. Blaha, Whitten
L. L. Bowie, Zearing
E. Cobb, Marshalltown
A. C. Conaway, Marshalltown
K. E. Fee, Toledo
R. F. French, Marshalltown
S. B. Goodenow, Colo
G. R. Gould, Conrad
R. E. Gray, Eldora
R. S. Grossman, Marshalltown
W. F. Hamilton, Marshalltown
R. R. Hansen, Marshalltown
G. W. Harris, Marshalltown
A. J. Havlik, Tama
G. E. Hermence, Marshalltown
J. A. W. Johnson, Newton
G. M. Johnson, Marshalltown
H. V. Kahler, Reinbeck
W. F. Kauffman, Marshalltown
R. E. Keyser, Marshalltown
E. C. Knight, Garwin
E. O. Koeneman, Eldora
F. T. Launder, Garwin
L. H. Launder, Marshalltown
A. R. Lynn, Marshalltown
C. W. Maplethorpe, Toledo
E. J. Marble, Marshalltown
P. L. Marble, Liscomb
W. P. Marble, Marshalltown
P. F. Marling, Gladbrook
G. T. McDowall, Gladbrook
N. Merrill, Marshalltown
M. G. Meyer, Marshalltown
G. R. Meyer, Marshalltown
E. M. Mills, Le Grand
H. L. Mol, Grundy Center
I. D. Nelson, Toledo
E. H. Noble, Clemons
L. E. Noble, Rhodes
J. J. Noonan, Marshalltown
R. L. O'Toole, Marshalltown
J. R. Parish, Grinnell
M. G. Reed, Melbourne
J. E. Rose, Grundy Center
A. J. Schroeder, Marshalltown
J. Sinning, Melbourne
E. M. Smith, State Center
W. W. Southwick, Marshalltown
R. T. Spain, Conrad
J. M. Standefer, Tama
J. J. Stegman, Marshalltown
W. F. Sult, Gilman
F. J. Swift, Marshalltown
L. F. Talley, Marshalltown
M. H. Thielen, Grundy Center
B. L. Trey, Marshalltown
H. F. Turner, Marshalltown
F. L. Wahrer, Marshalltown
K. H. Weaver, Union
R. C. Wells, Marshalltown
A. J. Wentzien, Tama
L. J. Wilkinson, Laurel
O. R. Wolfe, Marshalltown
R. M. Wolfe, Marshalltown
A. D. Woods, State Center

IOWA FEDERATION OF WOMEN'S CLUBS BROADCASTS

For several years the Speakers Bureau has cooperated with the Iowa Federation of Women's Clubs in planning a series of radio talks over Station KSO in Des Moines. This series is entitled, "Keeping Well Folks Well," and has enjoyed a great deal of popularity in the past.

The opening program this fall was presented by Dr. H. E. Farnsworth of Storm Lake on Tuesday, October 10. Dr. Farnsworth's discussion, "Prevention Pays a Premium," dealt with the smallpox vaccination campaign which was launched in Iowa, October 30. Dr. A. E. Merkel of Des Moines has prepared the second paper for the series which will be read Tuesday, November 14. His subject is "Fall Health Hazards." Dr. Alonzo L. Jenks, Jr., of Des Moines will close the monthly programs for 1939 on Tuesday, December 12, at which time he will address his radio audience on the topic, "Organizing for Health."

The programs are fifteen minutes in length and can be heard the first Tuesday in each month over KSO in Des Moines at 2:15 p. m.

ROUND TABLE DISCUSSIONS

The first of the round table discussions dealing with "Prematurity From the Obstetric and Pediatric Standpoint," which will replace the "refresher" courses in pediatrics and obstetrics, will be held in Grinnell, Tuesday, November 21, at the Community Hospital. Dr. E. D. Plass and Dr. P. C. Jeans of the State University of Iowa faculty will conduct the conference, and case histories will be introduced for review and discussion by the audience. All physicians in the vicinity of Grinnell are urged to attend this round table conference. There will be no charge for the instruction since the expenses are defrayed by federal funds. Letters will be mailed from this office giving the details of the meeting, and those physicians who desire to attend should notify Dr. C. E. Harris of Grinnell, or the Speakers Bureau in Des Moines.

The subject, "Prematurity from the Obstetric and Pediatric Standpoint," will open the first series of round table meetings, and it is hoped that this type of instruction will meet with the pronounced approval of each group which entertains a meeting. The Speakers Bureau will be pleased to receive requests from any district or county society which desires a round table conference. Dates for the meetings can be conveniently arranged any time after November 15.

RADIO SCHEDULE

WOI—Wednesdays at 3:45 p. m.

WSUI—Tuesdays at 4:00 p. m.

Nov. 14 Menopause, J. Stuart McQuiston, M.D.

Nov. 21 The Treatment of Open Wounds, G. H. Scanlon, M.D.

Nov. 28 Anesthesia, E. P. Lovejoy, M.D.

Dec. 5 Bright's Disease, A. A. Johnson, M.D.

FRACTURE FILMS

The Fracture Committee of the Iowa State Medical Society has available two films on first aid treatment of fractures. These will be sent to any county medical society which desires to show them to its members. The several county societies which have already shown the films have received them favorably. The running time for the reels is forty-five minutes and a 16 millimeter projector is necessary for their presentation. Requests for the films should be sent in early since they are booked several weeks ahead.

WOMAN'S AUXILIARY NEWS

MRS. FRED MOORE, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—MRS. EDWARD A. HANSKE, Bellevue
President Elect—MRS. ELBERT T. WARREN, Stuart
Secretary—MRS. WALTER J. CONNELL, Dubuque
Treasurer—MRS. JAY C. DECKER, 722 Thirty-sixth Street, Sioux City

ORGANIZATION

One of the real reasons for the organization of the Woman's Auxiliary to the Iowa State Medical Society was to bring about unity and friendliness through fellowship. This social function has been fulfilled and the friendly spirit which exists within our profession is naturally felt in the many organizations with which we come in contact.

No doubt each organized county is busy with its program and plans; however, I do wish you would plan to ask your nearest county auxiliary to enjoy a meeting with you. Will you also try to interest those members in your own county who do not take an active part in your work? Let us try to have every organized county 100 per cent in membership.

Your State Organization Committee, which is composed of the four vice presidents and the president elect, is planning a state-wide drive for membership. The first step will be to contact the county medical societies and secure their approval. If you, as an individual in any unorganized county, would arrange with the other doctors' wives for an informal meeting to discuss the matter, we will gladly send you necessary and pertinent material. Whenever possible members of our committee will come to you to help with the forming of your auxiliary. The Program Committee this year has offered exceptionally worthwhile outlines for study, and these splendid programs are available for each group. The monthly News Letters, which come from national headquarters, keep us informed as to activities and projects in other counties and states.

Please contact the member of this committee nearest to you; tell us you want to organize and we will be glad to help you all we can: Mrs. E. T. Warren of Stuart; Mrs. F. W. Mulsow, 357 Garden Drive, Cedar Rapids; Mrs. E. D. Miller, Wellman; Mrs. C. B. Hickenlooper, Winterset, and

Mrs. W. R. Hornaday, Chairman
3011 High Street, Des Moines, Iowa

The following inspirational message was received from the National Auxiliary, and we are reprinting it here in the hope that it will be a challenge to every intelligent progressive doctor's wife. It is entitled "How Does a Member Support Her Auxiliary?"

1. By paying dues.
2. By attending meetings.
3. By accepting offices and chairmanships in other organizations, especially those related to health, so that
   a. Informed speakers may address them.
   b. Approved material may be given.
   c. Programs and projects may be undertaken which are scientifically sound.
   d. She may keep informed about medical matters and activities in other organizations.
   e. She can report to her president and society, programs and projects which are unwise and unacceptable; report to be made through advisors.
4. By promoting good fellowship at meetings, and attending entertainments and conventions.
5. By fulfilling the charges given through the advisors.

The busy wife is an asset to the Auxiliary, if she is an informed member, because she has many opportunities to carry the aims and decisions of the medical profession and keep health leadership where it belongs—with the profession. As a member, she may speak with authority, and receive respect and attention that will be missing if she is unattached to the official organization. It is not necessary to partake of every phase of Auxiliary work to be a good member—only what one can do. She should know when to keep quiet, when to report to advisors, when to answer and what to say. If for no reason but to assemble regularly and study the history of the medical arts and medical heroes, an Auxiliary would be worthwhile, because it would give wives an understanding of the supreme unselfishness and the greatness of the profession.

The time has come when the Auxiliary has so proved its worth that the question is not, "Are you an Auxiliary member?", but "Why are you not a member?"

SOCIETY PROCEEDINGS

Black Hawk County

W. Wayne Babcock, M.D., professor of surgery and clinical surgery at Temple University School of Medicine, Philadelphia, was guest speaker for the Black Hawk County Medical Society, at a meeting held in Waterloo, Monday, October 23. Dr. Babcock spoke on Peritonitis.

Boone-Story Society

Members of the Boone and Story County Medical Societies met at the Sheldon-Munn Hotel in Ames Tuesday, October 24, for a combined meeting of the two organizations. The scientific program was furnished by Horton C. Hinshaw, M.D., of The Mayo Clinic, Rochester, who spoke on Pneumonia and Upper Respiratory Infections.

Bremer County

The combined monthly meeting of the Bremer County Medical Society and the Staff of Mercy Hospital was held Wednesday, October 25, in Waverly, with Lewis M. Overton, M.D., of Des Moines, speaking on Orthopedic Backaches.

P. K. Graening, M.D., Secretary.

Buchanan County

The Buchanan County Medical Society met at the Hotel Gedney in Independence, Wednesday, October 11, at which time F. C. Redlich, M.D., of the Independence State Hospital staff, addressed the group on New Aspects in Psychiatric Diagnosis and Treatment. Dr. P. J. Leehey of Independence was appointed chairman of the smallpox vaccination campaign.

N. L. Hersey, M.D., Secretary.

Calhoun County

Robert M. Collins, M.D., of Council Bluffs, was guest speaker for the Calhoun County Medical Society at its meeting held Tuesday, October 17, in Rockwell City. His topic was Practical Endocrinology.

Cerro Gordo County

The Cerro Gordo County Medical Society entertained two physicians from The Mayo Clinic, Rochester, for the meeting held Tuesday, September 26, when Bayard T. Horton, M.D., and Alexander R. MacLean, M.D., delivered papers on New Developments in the Treatment of Headaches.

The meeting held Tuesday, October 17, was addressed by Walter D. Abbott, M.D., of Des Moines. His subject was The Significance of Low Back Pain.

Crawford County

Members of the Crawford County Medical Society were hosts to their wives, and the dentists of the county and their wives, at a dinner meeting held in Denison, Tuesday, October 3. The speaker of the evening was Henry N. Boyne, M.D., of Omaha, who spoke on The Care of Facial Injuries.

Dallas-Guthrie Society

Lester R. Dragstedt, M.D., professor of surgery, University of Chicago, School of Medicine, delivered an address on The Etiology and Surgical Treatment of Gastroduodenal Ulcers, for members of the Dallas and Guthrie County Medical Societies at a meeting held in Guthrie Center, Wednesday, October 25.

Officers elected at the business session for the coming year are: Dr. Marion H. Brinker of Yale, president; Dr. Charles A. Nicoll of Panora, vice president; Dr. Samuel J. Brown of Panora, secretary and treasurer; Dr. Edwin J. Butterfield of Dallas Center, delegate; and Dr. Clarence I. Thomas of Guthrie Center, alternate delegate.

Decatur County

The Decatur County Medical Society opened its fall series of scientific meetings, Tuesday, October 24, at the Decatur County Hospital in Leon. Diedrich J. Haines, M.D., of Des Moines, presented an illustrated lecture on Blood Diseases; and Arnold M. Smythe, M.D., also of Des Moines, discussed Diagnostic Aids in Pediatrics.

Jasper County

Addison W. Brown, M.D., of Des Moines, was guest speaker for the Jasper County Medical Society, Tuesday, October 3, at a meeting held in Newton at the Skiff Memorial Hospital. Dr. Brown spoke on Placenta Praevia.

Johnson County

The first fall meeting of the Johnson County Medical Society was held Wednesday, October 4, at the Hotel Jefferson in Iowa City. After the dinner and short business session, Harry Goldblatt, M.D., professor of experimental pathology, Western Reserve University, School of Medicine, Cleveland, addressed the group on Experimental Observations on the Pathogenesis and Treatment of Hypertension.

R. J. Prentiss, M.D., Secretary.

Lee County

The quarterly conference of the Lee County Medical Society was held Friday, October 20, at St. Joseph Hospital in Keokuk, opening at 4:00 p. m. The six-thirty dinner was served at the Graham Hospital, after which the evening program was presented. Papers were as follows: Uterine Bleeding, John I. Brewer, M.D., attending gynecologist, St. Luke's Hospital, Chicago; Clinical Importance of Pylorospasm, Grant H. Laing, M.D., attending physician, St. Luke's Hospital, Chicago; Newer Treatment of Mental and Nervous Diseases, George W. Hall, M.D., clinical professor of neurology, Rush Medical College, Chicago; and Low Back Pain, Fremont A. Chandler, M.D., assistant professor of orthopedic surgery, Northwestern University Medical School, Chicago. The meeting was well attended and the papers well presented.

T. L. McKee, M.D., Acting Secretary.

Linn County

The next meeting of the Linn County Medical Society will be held in Cedar Rapids, Thursday, December 14, when the society will entertain Sumner L. Koch, M.D., associate professor of surgery, Northwestern University Medical School, Chicago. Dr. Koch will discuss Compound Injuries of the Hand, with special attention to Treatment of Burns.

T. F. Hersch, M.D., Chairman, Program Committee.

Muscatine County

The Muscatine County Medical Society held its regular monthly meeting, Thursday, October 26, in the Jap Room of the Hotel Muscatine. The evening program was devoted to a discussion of fractures. One film prepared by the Massachusetts General Hospital, and two films furnished by the Fracture Committee of the Iowa State Medical Society, were shown. Leo J. Miltner, M.D., of Davenport, presented two original films, and discussed some of the vital points in the treatment of fractures, as illustrated by his films and lantern slides.

E. O. Muhs, M.D., Secretary.

Scott County

The regular meeting of the Scott County Medical Society was held in Davenport, Tuesday, October 3. Following the six o'clock dinner, a symposium on The Medical and Surgical Aspects of Gastro-enterology, was presented by Sidney A. Portis, M.D., associate clinical professor of medicine, Rush Medical College, Chicago; and Bernard Portis, M.D., assistant professor of surgery, University of Illinois, College of Medicine, Chicago.

P. E. Gibson, M.D., Secretary.

Wayne County

The Wayne County Medical Society met in regular session Tuesday, October 10, in the office of Dr. A. E. Davis of Seymour. Robert L. Fenton, M.D, of Centerville, read a paper on Hemorrhoids and Allied Conditions; and John H. McCall, M.D., of Allerton, spoke on Medical Ethics.

Woodbury County

Rudolf Schindler, M.D., associate professor of medicine, School of Medicine of the Division of Biological Sciences, University of Chicago, was guest speaker for the regular meeting of the Woodbury County Medical Society, held in Sioux City, at the Mayfair Hotel, Monday, October 30. Dr. Schindler spoke on Gastroscopy.

W. H. Gibbon, M.D., Secretary.

Iowa Obstetrical Society

Members of the Iowa Obstetrical Society, which was organized last May, assembled in Iowa City, Friday, October 6, for their first clinical session. The afternoon program consisted of the following papers presented by hospital staff members: The Sensitivity of the Vaginal Mucosa to Monilia, W. J. Moore; Human Inoculations with a Pure Culture of Trichomonas Vaginalis, R. E. Trussell; Rupture of the Membranes as a Method of Inducing Labor, W. C. Keettel; The Mechanics of Pelvic Support (motion picture) W. F. Mengert; Vitamin K and Its Rôle in the Physiology of the Newborn, R. L. Sells; Demonstration of Fetal Heart Recording Device, A. W. Diddle; and Funic Prolapse and its Relation to the Length of the Cord, H. F. Longwell. The closing session of the meeting was held Saturday morning, October 7, at the University Hospital, with Dr. Mengert and his staff presenting an operative clinic.

Southeastern Iowa District Medical Society

The Sixty-fourth Annual Meeting of the Southeastern Iowa District Medical Society was held at the Country Club in Washington, Thursday, October 26, at 10:00 a. m. Harold E. Graber, M.D., of Fairfield, opened the session with a paper on Clinical Aspects of Heart Disease, after which Ruben Nomland, M.D., professor of dermatology and syphilology, State University of Iowa, College of Medicine, conducted a skin clinic. The afternoon program was as follows: Eye Injuries, Arthur C. Richmond, M.D., Fort Madison; Gallbladder Diseases, A. Keith Droz, M.D., Washington; The Newer Concepts in the Treatment of Gonorrhea, George D. Jenkins, M.D., Burlington; and Infant Feeding, Philip C. Jeans, M.D., professor of pediatrics, State University of Iowa, College of Medicine. Officers elected at the business meeting are: Dr. A. Keith Droz of Washington, president; Dr. Samuel W. Huston of Mt. Pleasant, vice president; and Dr. Frank S. Richmond of Fort Madison, secretary and treasurer.

PERSONAL MENTION

Dr. Harry P. Smith, professor of pathology, State University of Iowa, College of Medicine, presented a paper at the Twenty-fourth International Medical Assembly, held in Chicago, October 30 to November 3, 1939. Dr. Smith spoke on "The Jaundiced Bleed-

er; Control of Hemorrhage with Special Reference to Vitamin K Therapy".

Dr. James E. Reeder of Sioux City, announces the association of his son, Dr. James E. Reeder, Jr., with him in his practice, limited to ophthalmology and otolaryngology. Dr. Reeder, Jr., was graduated in 1935 from the State University of Iowa, College of Medicine, and served his interneship at Clarkson Hospital in Omaha. He comes to Sioux City directly from Chicago, where he has spent the past three years in a special interneship and residency at the Illinois Charitable Eye and Ear Infirmary.

Dr. Joseph R. Winnett of Eldora, announces that Dr. John W. Jansonius will be associated with him as his assistant in the practice of medicine and surgery. Dr. Jansonius was graduated in 1937 from Washington University School of Medicine, St. Louis, and has been practicing for the past few months in Iowa Falls.

Dr. Ruth F. Wolcott of Spirit Lake, addressed the Algona Women's Club, Friday, October 13, at a meeting held in the Algona Public Library. Her topic was "The Effect of the Mind on Health".

Dr. Abner Buresh, formerly of Saratoga and Osceola has arrived in Lime Springs, where he will take over the practice and office equipment of Dr. H. W. Plummer, according to a recent announcement by Dr. Plummer. Dr. Buresh was graduated from the State University of Iowa, College of Medicine, in 1935, and completed a year's interneship at the Fresno County Hospital, Fresno, California.

Dr. Milford E. Barnes, professor of hygiene and preventive medicine, State University of Iowa, College of Medicine, discussed the subject, "Student Health Service" at the Fiftieth Annual Meeting of the Association of American Medical Colleges, held in Cincinnati, Ohio, October 23 to 25, 1939.

Dr. Charles J. Baker has entered practice in Fort Dodge in association with Dr. Roland Stahr, pediatrician. Dr. Baker was graduated in 1932 from Cornell University Medical College, New York, and interned at Brooklyn Hospital, after which he did special postgraduate work in pediatrics at the New York Postgraduate Medical School and Hospital.

Dr. Benjamin D. Van Werden, formerly of Houston, Texas, is locating in Fort Madison, where he will take over the practice and office of the late Dr. F. B. Dorsey. Dr. Van Werden was graduated in 1934 from the Louisiana State University Medical Center, New Orleans, and has been practicing for the past three years in Houston.

Dr. D. O. Bovenmyer of Ottumwa, announces the association of Dr. Wilson C. Wolfe, formerly of Coon Rapids, with him in the practice of his specialty, diseases of the eye, ear, nose and throat.

Dr. Hale F. Shirley, assistant professor of psychiatry, State University of Iowa, College of Medicine, has resigned. He will resume practice in San Francisco, California, as director of the Child Guidance Clinic, and will be assistant professor of psychiatry and pediatrics at Stanford University School of Medicine, San Francisco.

Dr. S. F. Smazal will be associated with Drs. W. G. Bessmer and George M. Middleton, in their practice of medicine and surgery in Davenport. Dr. Smazal was graduated in 1937 from Creighton University School of Medicine, Omaha, and interned at St. Anthony's Hospital in Rock Island, Illinois.

Dr. John W. Dulin, faculty member at the State University of Iowa, College of Medicine, spoke at a meeting held in Winfield, Tuesday, September 26, and sponsored by the Women's Federated Club of Winfield. Dr. Dulin's subject was "Cancer Control", and he presented colored slides to illustrate his address.

Dr. Norman M. Johnson, formerly of St. Louis, Missouri, has located in Clarinda. He will limit his practice to surgery. Dr. Johnson was graduated in 1935 from Washington University School of Medicine, St. Louis, and interned at the St. Louis City Hospital, where he also received special training in surgery for the past three years.

Dr. Anthony P. Smith, who has practiced for the past twelve years at Festus, Missouri, has located in Waukon and plans to enter practice there. He was graduated from St. Louis University School of Medicine, in 1926.

Dr. Paul W. Hogan is another new addition to the medical profession in Waukon. He was graduated from the State University of Iowa, College of Medicine, in 1933, and served his interneship at the University Hospital in Columbus, Ohio. Dr. Hogan returned to Iowa City, and was connected with the student health department there during 1936 and 1937. Since 1937 he has been associated with the Fitzsimons General Hospital in Denver, Colorado.

Dr. E. E. Gamet of Lamoni, spoke for the district conference of the Business and Professional Women's Club, held in Osceola, Sunday, October 8, on "The Modern Health Program".

Dr. Elmer J. Bild is leaving Doon, and locating in Ireton, where he will occupy the offices of Dr. Fred-

erick C. Bendixen, who has moved to Le Mars. Dr. Bild has practiced in Doon for the past sixteen years, with the exception of two years spent in Warsaw, Nebraska.

Dr. Frederick D. Koehne has located in Audubon, where he will open offices for the general practice of medicine. He was graduated in 1938 from the University of Nebraska, College of Medicine, Omaha, and interned at St. Vincent's Hospital in Toledo, Ohio.

MARRIAGES

Miss Ida Irene Bock, daughter of Mr. and Mrs. Lou Bock of Baldwin, and Dr. Elwin G. Rawson of Anamosa, were married Friday, October 20, at the home of the bride's parents. Mrs. Rawson is a registered nurse, having been graduated from the Jane Lamb Hospital of Clinton in 1935. After a wedding trip to Chicago, the couple returned to Anamosa where Dr. Rawson has been practicing for many years.

DEATH NOTICES

Fair, Adam Bert, of Ottumwa, aged sixty-eight, died October 21, after a four months' illness. He was graduated in 1895 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Wapello County Medical Society.

Moerke, Albert Charles, of Burlington, aged seventy-two, died October 30, after an extended illness. He was graduated in 1896 from Bennett College of Eclectic Medicine and Surgery, Chicago, and at the time of his death was a life member of the Des Moines County and Iowa State Medical Societies.

Plant, Oscar H., of Iowa City, aged sixty-four, died suddenly October 1, of coronary sclerosis. He was graduated in 1902 from the University of Texas, School of Medicine, Galveston, and at the time of his death was a member of the Johnson County Medical Society.

Rowse, Robert Q., of Sioux City, aged sixty-nine, died suddenly September 27, after a heart attack. He was graduated in 1893 from the Medical College of Ohio, Cincinnati, and at the time of his death was a member of the Woodbury County Medical Society.

Small, William Boswell, of Waterloo, aged seventy-seven, died October 9, after several years' illness. He was graduated in 1890 from Northwestern University Medical School, Chicago, and at the time of his death was a life member of the Black Hawk County and Iowa State Medical Societies.

Weiss, Irving Joseph, of Callender, aged thirty-three, died October 17, of leukemia. He was graduated in 1931 from Creighton University School of Medicine, Omaha, and at the time of his death was a member of the Webster County Medical Society.

COMMUNICABLE DISEASE PREVALENCE IN OCTOBER

(Continued from page 570)

For additional information relative to reported cases of communicable disease during August and September, see the accompanying morbidity tables.

PREVALENCE OF DISEASE

	Aug. '39	July '39	Aug. '38	Most Cases Reported From
Diphtheria	14	9	18	Black Hawk, Polk
Scarlet Fever	44	58	62	(For State)
Typhoid Fever	38	23	35	Davis, Wapello
Smallpox	13	53	10	Polk, Henry
Measles	80	271	60	Dubuque, Poweshiek
Whooping Cough	65	136	134	Woodbury, Black Hawk, Grundy
Epidemic Meningitis	2	1	5	Mahaska, Poweshiek
Chickenpox	13	46	9	(For State)
Mumps	19	42	45	Page, Des Moines, Woodbury
Poliomyelitis	6	1	11	(For State)
Rocky Mountain Spotted Fever	5	6	1	Marion
Tuberculosis (pulmonary)	61	82	29	(For State)
Undulant Fever	19	18	25	(For State)
Gonorrhea	145	163	195	(For State)
Syphilis	269	255	235	(For State)

PREVALENCE OF DISEASE

	Sept. '39	Aug. '39	Sept. '38	Most Cases Reported From
Diphtheria	21	14	47	Polk, Black Hawk
Scarlet Fever	96	44	89	Polk, Scott, Cerro Gordo
Typhoid Fever	13	38	19	Appanoose, Scott
Smallpox	17	13	11	Muscatine, Henry
Measles	21	80	16	Dubuque, Black Hawk, Woodbury
Whooping Cough	51	65	75	Woodbury, Des Moines, Pottawattamie
Epidemic Meningitis	0	2	3	(For State)
Chickenpox	13	13	16	(For State)
Mumps	22	19	24	Des Moines
Poliomyelitis	35	6	9	Madison, Webster
Tuberculosis (Pulmonary)	43	61	59	(For State)
Undulant Fever	21	19	7	(For State)
Gonorrhea	135	145	201	(For State)
Syphilis	281	269	237	(For State)

MEDICINE IN THE NEWS

Attention is again directed to the radio program sponsored and prepared by the American Medical Association, which is now entering its seventh season of broadcasting, over the facilities of the National Broadcasting Company. The opening program was given Thursday, November 2, at 3:30 central standard time, and presentations will be made regularly at that time each week. They will consist of dramatizations, drawn from current activities in the field of medicine, and for this reason the subjects of the broadcasts cannot be announced in advance. Iowa stations carrying this program are KSO in Des Moines and WMT in Cedar Rapids.

The radio has become an important and stimulating factor in the lives of all classes of people in America today, and it is hoped that the American Medical Association will receive the loyal support it merits in this additional endeavor to educate the lay public on the principles, aims and high ideals of the medical profession of America.

History of Medicine in Iowa

Edited by the Historical Committee

Dr. Frank M. Fuller, Keokuk
Dr. John T. McClintock, Iowa City
Dr. R. T. Lenaghan, Clinton
Dr. Tom B. Throckmorton, Des Moines
Dr. Walter L. Bierring, Des Moines
Dr. William Jepson, Sioux City

WILLIAM B. SMALL, M.D., F.A.C.S.
1862-1939

Once again the ranks of the past presidents of the Iowa State Medical Society have been broken, in the death of Dr. William Boswell Small at Waterloo, Iowa, on October 9, 1939, at the age of seventy-seven years.

Dr. Small was born in New Bedford, Lawrence county, Pennsylvania, on July 9, 1862. At the age of twelve years he came with his mother and sister, after his father's death, to live on a farm near Aledo, Illinois. His early education was obtained at a nearby rural school and at Aledo Academy. He began his medical education at Miami Medical College in Cincinnati, completing it at Northwestern University Medical School (Chicago Medical College), from which he was graduated with the degree of doctor of medicine on April 29, 1890. Dr. Small located in Waterloo, Iowa, in 1890. After one year of general practice, he decided to engage in the specialty of eye, ear, nose and throat diseases, and prepared for the same by more than a year of postgraduate study at the Illinois Eye and Ear Infirmary, Dr. Prince's Sanatorium at Jacksonville, Illinois, and the New York City Eye and Ear Infirmary. He was recognized for his leadership in this specialty and contributed liberally to programs of county, district and state society meetings. Because of impaired health it became necessary for him to retire in 1926, after thirty-five years of specialized practice.

During a long and active medical career he devoted his best talents to medical society activities; a charter member of the Waterloo Medical Society; a member of the Iowa State Medical Society for nearly fifty years, and a Fellow of the American Medical Association for a similar period. He was an active member of the Austin Flint-Cedar Valley Medical Society, and the first physician in Waterloo to be elected to fellowship in the American College of Surgeons. He filled with distinction all the offices in the Waterloo Medical Society, and was honored with the presidency of the Iowa State Medical Society in 1916. He also served the State Society as treasurer from 1902 to 1915. He was a member of the Board of Trustees from 1919 to 1927, and while acting in that capacity, also represented the Iowa State Medical Society as delegate to the American Medical Association from 1918 to 1921.

Dr. Small was married to Florence Luella Alyea of Aledo, Illinois, on April 30, 1890, and she has been a faithful and cheering helpmate during nearly fifty years. Thus has passed from our midst one of Iowa's medical pioneers—ever true to the Hippocratian faith and its ideals of medical service.—W.L.B.

ALBERT CHARLES MOERKE, M.D.
1867-1939

As the Journal goes to press, comes the word of the passing of another pioneer physician in the death of Dr. Albert C. Moerke of Burlington, Iowa, on October 30, 1939.

He was born in Germany in 1867, coming to this country at an early age. His medical education was obtained at the Bennett College of Eclectic Medicine and Surgery, Chicago, from which he was graduated on March 31, 1896. He located at Burlington, Iowa, soon after his graduation and had been an active practitioner there ever since.

Early in his practice, Dr. Moerke became interested in the control of tuberculosis, and participated actively in public health work. His talent along these lines was recognized in his appointment, by Governor A. B. Cummins, to membership on the State Board of Health and the Board of Medical Examiners in 1905, with which bodies he served until 1911. He was a member of the Des Moines County Medical Society, the Iowa State Medical Society and the American Medical Association. During the past three years he served on the Medical Economics Committee of the State Society, where his wise counsel, based on a long experience in practice, was of great service to the committee.

In his own practice, he was fortunate to pass the mantle to a worthy son, Dr. Robert Frank Moerke (Iowa, 1934), who has been associated with him for several years. Dr. Moerke will be remembered for his rugged personality, his frank and upright character, and his constant devotion to the higher interests of his profession. —W.L.B.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

PRINCIPLES AND PRACTICE OF OPHTHALMIC SURGERY—By Edmund B. Spaeth, M.D., associate professor of ophthalmology in the Graduate School of Medicine, University of Pennsylvania. Lea and Febiger, Philadelphia, 1939. Price, $10.00.

THE VAGINAL DIAPHRAGM—By Le Mon Clark, M.D., Chicago. Illustrated. The C. V. Mosby Company, St. Louis, 1939. Price, $2.00.

WHAT IT MEANS TO BE A DOCTOR—By Dwight Anderson. Published by the Public Relations Bureau, Medical Society of the State of New York, 2 East 103rd Street, New York, N. Y., 1939. Price, $1.00.

MENSTRUAL DISORDERS, PATHOLOGY, DIAGNOSIS AND TREATMENT—By C. Frederic Fluhmann, M.D., associate professor of obstetrics and gynecology, Stanford University School of Medicine, San Francisco, California. W. B. Saunders Company, Philadelphia and London, 1939. Price, $5.00.

THE GENUINE WORKS OF HIPPOCRATES—Translated from the Greek by Francis Adams, LL.D., Surgeon. The Williams and Wilkins Company, Baltimore, Maryland, 1939. Price, $3.00.

A TEXTBOOK OF CLINICAL NEUROLOGY—By Israel S. Wechsler, M.D., professor of clinical neurology, Columbia University, New York. Fourth edition, revised. W. B. Saunders Company, Philadelphia and London, 1939. Price, $7.00.

CLINICAL PATHOLOGICAL GYNECOLOGY—By J. Thornwell Witherspoon, M.D., formerly associate professor of experimental and pathological gynecology, Indiana University Medical Center. Lea and Febiger, Philadelphia, 1939. Price, $6.50.

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NITROUS OXIDE-OXYGEN ANESTHESIA—By F. W. Clement, M.D., director of anesthesia at Flower Hospital, Toledo, Ohio. Lea and Febiger, Philadelphia, 1939. Price, $4.00.

INJURIES OF THE NERVOUS SYSTEM—By Otto Marburg, M.D., clinical professor of neurology; and Max Helfand, M.D., assistant clinical professor of neurology and psychiatry, Columbia University. Veritas Press, New York, 1939. Price, $3.00.

EYE, EAR, NOSE AND THROAT MANUAL FOR NURSES—By Roy H. Parkinson, M.D., St. Joseph's Hospital, San Francisco. Fourth edition. The C. V. Mosby Company, St. Louis, 1939. Price, $2.25.

BOOK REVIEWS

ENDOCRINOLOGY IN MODERN PRACTICE

By William Wolf, M.D., New York. Second edition, completely revised. W. B. Saunders Company, Philadelphia and London, 1939. Price, $10.00.

This second edition will probably play a key rôle in the rapidly extending field of endocrinology. More tangible facts are being evolved in endocrine diagnosis and therapy, and with these advances will come the knowledge of new physiologic and pathologic entities.

Included in this new volume are pertinent facts on the new highlights in this complicated field, such as protamine zinc insulin, mineral metabolism, standardized gland products, the rôle of the autonomic nervous system, endometrial biopsies, and several new diagnostic procedures.

The text is divided into four sections; the first dealing with the anatomy, histology, biology, physiology, and pathology of the various endocrine glands, the vitamins, the menopause, obesity, pregnancy, sterility, and menstrual disorders. The second section discusses the endocrine part of "non-endocrine" diseases in orthopedics, mental diseases, gastro-intestinal disorders, skin conditions, cardio-vascular diseases and oral cavity pathology. The third part deals with the diagnosis of endocrinopathies, and the last section is a timely symposium of the many endocrine preparations, and a discussion on the use of these preparations with respect to their pharmacodynamic action.

The book makes one conscious of the importance and vast scope of endocrinology. One will be impressed with new realizations to be associated with all disease processes, and be stimulated to make a search for some endocrinologic explanation. It is a superior text for those with a modern mind.

J. W. C.

MEDICAL STATE BOARD EXAMINATIONS

By Harold Rypins, M.D., secretary, New York State Board of Medical Examiners. Fourth edition, revised. J. B. Lippincott Company, Philadelphia, 1939. Price, $4.50.

Dr. Rypins, after fifteen years' experience with candidates for admission to the practice of medicine, is in a most advantageous position to give the medical student a valuable guide as he prepares for the licensing examination. A review of this volume convinces one that the author has admirably achieved his purpose in presenting an organized summary of actual questions given in medical licensing examinations throughout the United States.

The book is divided into the ten common sections; anatomy, physiology, chemistry, bacteriology, pathology, hygiene and preventive medicine, obstetrics and gynecology, medicine, and surgery. Each section contains complete but concise fundamentals of the subject under discussion, and the questions follow immediately. The author specifically states that no attempt has been made to teach the student anything new. In his own words, "The object is, not to cram his mind; rather, to assist him in selecting and rearranging his material intelligently and practically".

Perhaps the most valuable part of the volume is the preface, in which Dr. Rypins directs a few well

chosen remarks to the medical graduate. His advice should do much to remove the apprehension which fills the mind of the student facing these examinations. It is the recommendation of this reviewer that a copy of the text be made available for all medical graduates. D. K.

A TEXTBOOK OF OBSTETRICS

By Charles B. Reed, M.D., associate professor of obstetrics, Northwestern University Medical School; and Bess I. Cooley, R.N., supervisor and instructor, department of obstetrics, Wesley Memorial Hospital, Chicago. The C. V. Mosby Company, St. Louis, 1939. Price $3.00.

The authors have accomplished their purpose in this volume by giving us a clear, concise textbook for the instruction of nurses in the study of obstetrics. The volume is well written with reference to text. It is well condensed so that the nurse will not be annoyed by a profusion of details not necessary and not referable to her profession. It is evident that the authors have attempted to make the material as simple as possible for the easy assimilation of the already over-burdened student nurse and in so doing they have not missed any of the essential facts. Perhaps, the chapter on the care of the newborn could have been enlarged to include the more recent developments in neonatal care; and a chapter on the history of obstetrics might have been added.

The volume is profusely illustrated. Because of the fact that illustration No. 159 is upside down and some of the other pictures are apparently very old and not well chosen, one receives the impression that possibly the book was put together rather hastily and without careful editing. O. N. G.

SOCIOLOGY AND SOCIAL PROBLEMS

By Deborah MacLurg Jensen, R.N., social service consultant to the Visiting Nurses Association, St. Louis. The C. V. Mosby Company, St. Louis, 1939. Price $2.75.

Since the latest Curriculum Guide for Schools of Nursing more specifically emphasizes as necessary the subjects indicated in the title of the book, there is no doubt that the volume will be welcomed by those who are responsible for the teaching of both subjects in Iowa's schools of nursing. The author, who is a nurse, has had a wide experience in teaching student nurses, as well as in active social work. It has long been recognized that the nurse, whatever her chosen specialty, has needed more preparation in the social sciences, and it is conceivable that a member of the profession might best function in the writing of such a textbook. The many quotations from several authoritative sources are valuable, but they would be more readily understandable if a glossary of terms used in sociologic discussions had been included. The questions and references indicated for both the student and the teacher, which follow each general topic, should be helpful to both groups. From a public health point of view, one of the outstanding commendable characteristics of the book is the paper and type used. A. L. H.

MODERN CLINICAL PSYCHIATRY

By Arthur P. Noyes, M.D., superintendent, Norristown State Hospital, Norristown, Pennsylvania. Second edition, rewritten and enlarged. W. B. Saunders Company, Philadelphia and London, 1939. Price, $5.00.

Dr. Noyes is the superintendent of a large public institution and the reader is not disappointed in expecting from him a practical and useful, if somewhat dogmatic, treatise on mental diseases. The introductory chapters deal with such general considerations as the development of the mind, the conscious and unconscious, mental mechanisms and motives, all from the biologic viewpoint, in which physical structure and function are paramount. Due consideration is also given to the less tangible concepts of psychopathology in connection with the explanation of such phenomena as the subconscious mind and the dynamics of behavior, and the analysis of certain mental symptoms.

The body of the book is given over to a conventional consideration of the psychoses and neuroses in which one sees constantly the influence of a large and long experience with actual case material. The writer has no new theories to expound or defend; he holds to proved and accepted methods of treatment. By using the classification adopted by the American Psychiatric Association he avoids confusing the reader as is invariably done by the author with a "new and better" classification.

It is unfortunate that Dr. Noyes has seen fit to devote only ten pages to the subject of psychiatry and general medicine in a text which should be read freely by men in lines other than psychiatry.

R. C. D.

DISEASES OF THE MOUTH AND THEIR TREATMENT

By Hermann Prinz, D.D.S., M.D., professor emeritus of materia medica and therapeutics, University of Pennsylvania School of Dentistry; and S. S. Greenbaum, M.D., professor of clinical dermatology and syphilology, Graduate School of Medicine, University of Pennsylvania, Lea and Febiger, Philadelphia, 1939. Price, $9.00.

This is an excellent book. Although much of its material duplicates the discussion found in any standard textbook on the head specialties, this duplication is necessary to a systematic handling of the subject, and does not detract from the excellent presentation of material not found in a more general text. This book fills a great gap in the literature on the many minor conditions of the mouth, classification and treatment of which can be so difficult because readily available and pertinent information is lacking.

Gaining authority from the fact that both medical and dental experience is reflected, the volume is exceedingly well organized, has an adequate index, and contains a profusion of good illustrations, which, in themselves, should be a valuable aid to the recognition of many oral lesions. One is particularly impressed by the discussion of acute inflammations of the mouth and gums, and the orderly classification of their causes, local and general. Syphilis of the mouth is given generous space and is especially well illustrated, as are the oral disturbances due to metals, gases, and occupational exposures.

Altogether it is a fine book, and well worth anyone's study, regardless of his specialty. J. V. T.

SURGICAL APPLIED ANATOMY

By Sir Frederick Treves, Bart.; tenth edition revised by Lambert Rogers, M.D., professor of surgery, University of Wales. Lea and Febiger, Philadelphia, 1939. Price, $4.50.

The reviewer believes that this work contains the essential facts of surgical anatomy in a concise manner. The discussions of various anatomic structures and their relationships are brief; one would have to refer to other works or systems of operative surgery to obtain the details for which this book was not intended, and which could not be included in this small volume. However, with the knowledge of human anatomy which is expected of the successful practitioner, this volume should prove exceedingly helpful.

The book is also an excellent review of anatomy for one who has not studied it for some time. There are numerous clinical facts of importance in relationship to anatomy. This book very well fulfills the purpose for which it was written. L. C. N.

THE ART OF ANAESTHESIA

By Paluel J. Flagg, M.D., visiting anesthetist to Manhattan Eye and Ear Hospital. Sixth edition, revised. J. B. Lippincott Company, Philadelphia and London, 1939.

Despite the fact that Dr. Flagg entitles his work "The Art of Anaesthesia" he also covers very thoroughly the scientific aspects of the subject. The chapters on signs, methods and technics of anesthesia are detailed and worthy of careful study by anyone called upon to administer any of the agents in use today. Some of the methods as described will never be used by even the specialist, but their study will help him to improve his work by modifying his own technics.

The author's years of work and research in the field of asphyxia have particularly fitted him to give his excellent discussion of the various theories and methods of resuscitation. He urges that the specialist in the field of anesthesia not restrict himself to the relief of pain during surgical and obstetric procedures, but be prepared to save life and treat clinical disease when necessary by the inhalation of oxygen or other gases. He suggests that there is a definite place in medicine for the specialist in anesthesia and pneumatology.

The book is one with which everyone doing work of this nature should be familiar. E. P. L.

FUNCTIONAL DISORDERS OF THE FOOT

By Frank D. Dickson, M.D., and Rex L. Diveley, M.D., orthopedic surgeons, St. Luke's Hospital, Kansas City, Missouri. J. B. Lippincott Company, Philadelphia and London, 1939. Price, $5.00.

In the preface the authors state reasons for the unsatisfactory situation which exists regarding care of the feet. They are two-fold; namely, lack of interest within the profession, and lack of knowledge among non-medical groups who handle many of the disorders of the foot. There follows a well arranged monograph with an exceptionally interesting first chapter on evolutionary development of the human foot. The problems of foot imbalance in children occupy an important portion of the book with excellent illustrations and many simple diagrams. Diseases involving the nails, skin, and the tarsal bones are only superficially mentioned, but a bibliography gives the reader ready reference to further information on these conditions. A well illustrated chapter on foot exercises concludes the book. Dickson and Diveley have produced, in an easily read manner, a story of a series of disorders, sadly neglected by the profession. D. C. C.

TREATMENT BY DIET

By Clifford J. Barborka, M.D., department of medicine, Northwestern University Medical School, Chicago. Illustrated. Fourth edition, revised. J. B. Lippincott Company, Philadelphia and London, 1939. Price $5.00.

This fourth edition is a complete appraisal of the various modern concepts of dietetics. Nutritional advances in the last few years have been many, and this text enables the practitioner to keep informed of the modern trends. It presents a concise and systematic method of prescribing diets in health and disease.

Part I stresses adequate diets in health and the clinical aspects of the various vitamins. The second section deals with the practical applications of diets and their individual value. A third division evaluates each diet for a specific disease entity; for example, diabetes mellitus, gout, obesity, nephritis, hematologic dyscrasias, constipation, etc. The last two parts consist of a summary of routine hospital diets, weight charts, and classifications of vegetables and foods.

As complete a treatise as this, on the important subjects of diet and nutrition, should find a welcome place on the library shelf of every general practitioner. J. W. C.

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THE BLOOD SEDIMENTATION TEST*

FREDERICK H. LAMB, M.D., Davenport

Blood is a suspension of corpuscles in plasma, and the sedimentation rate is simply a measurement of the stability of this suspension. The test is very easy to perform: it merely requires mixing the blood with a suitable anticoagulant and noting the rate at which a column of erythrocytes settles toward the bottom of an appropriate tube.

Since Robin Fahraeus[1], Westergren[2], and Linzenmeier[3], in 1921 and 1922 established this test on a clinical basis, many new technics have been introduced. Numerous attempts have been made to eliminate error and improve the test. Unfortunately certain refinements of doubtful importance have made the test appear difficult and uncertain. There has been a lack of uniformity in recording the results of the test. Moreover, the sedimentation rate of the corpuscles is increased in some diseases but not in others. All of this has resulted in confusion, and a tendency to neglect this useful test. It seems desirable, therefore, first to review the essential steps in technic, avoiding the non-essentials: and second, to re-evaluate the test from a standpoint of its simplicity. Of all the hematologic investigations the sedimentation test is the most adaptable to use by the general practitioner.

MECHANISM OF THE TEST

Fahraeus pointed out that the most important factor in the suspension stability of the blood is the size of the suspended particles. According to Stokes' law of hydrodynamics, the rate of settling is proportional to the difference between the specific gravity of the particle and that of the fluid, inversely proportional to the viscosity of the fluid and directly proportional to the square of the radius of the suspended particle. Rouleau formation or clumping of the erythrocytes is greater in disease than in health; it is greater in some diseases than others. This may be demonstrated simply by the microscopic examination of a fresh drop of blood as it spreads out on a slide under a cover glass. Sometimes the aggregation of red cells takes place more rapidly than the clotting process itself, so that the uppermost portion of a column of blood becomes cell free before the blood has congealed. Fahraeus also confirmed observations which had been made earlier tending to show that the increased aggregation of corpuscles is due to changes in their surface layer, which changes in turn are conditioned by an increase in the plasma of fibrinogen and plasma globulin. In other words, the increased speed of sedimentation of the blood corpuscles is closely associated with plasma fibrinogen and globulin.

Another factor over which there has been considerable controversy is the effect on the sedimentation rate of anemia, hydremia, and polycythemia. Although not fundamentally related to the sedimentation phenomenon, the concentration of cells in the plasma cannot be wholly disregarded. Anemia does have the effect of accelerating the rate, while polycythemia retards it. Partial correction may be made for these artefacts when the total volume of packed red cells, or the hematocrit reading of the blood is known. A chart has been devised by Wintrobe and Landsberg[4] for the correction of the sedimentation rate as determined at the end of one hour. Rourke and Ernestine[5] have published a similar chart for use when multiple readings are recorded during the one hour period. However, until we arrive at a better understanding of the cause of blood cell aggregation it is advisable to record both uncorrected and corrected findings, since the tendency to over-correction may be very misleading. As a practical matter corrections are not necessary as routine procedures. Where there is a slight degree of anemia the correction is negligible; only the moderately fast rate in the presence of a moderate anemia may require both readings. Where the diagnosis of pelvic cellulitis, tuberculosis, rheumatic fever or infectious arthritis is

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concerned, the uncorrected reading is more likely to reflect the true condition than is the corrected reading. Indeed, it is such doubtful refinements as this, such attempts at fictitious accuracy one might say, that have made the test seem complicated and its use, consequently, less popular.

A third factor of importance in the determination of the sedimentation rate is the selection of the tube to contain the column of blood. Three phases in the settling of the corpuscles may be distinguished; namely, a preliminary period of aggregation; then a period of most rapid fall, and finally a phase of piling up of the aggregates toward the bottom of the tube. These phases may be expressed graphically by recording multiple readings and plotting curves therefrom. If short tubes of the Cutler type (50 millimeters) are used it is essential to plot curves in order to bring out the phase of most rapid fall. The clumped cells tend to pile up in the short column of blood before full effect is given to the sedimentation rate. On the other hand, if long tubes of the Westergren type (200 millimeters) are used, the interference of packing is eliminated, and a single reading at the end of one hour is not only as efficient but much more practical. The Wintrobe[6] tube which is graduated to 100 millimeters is designed to overcome the disadvantage of the short tube, and also register the hematocrit value of the packed cells. In my experience the long-tube-one-hour technic is quite adequate for routine work. Correction for the volume of packed cells is interesting simply as additional data.

Regardless of length it is essential that the bore of the tube be at least three millimeters. The tube must be maintained throughout the test in a vertical position, since an inclination of as little as three degrees will artifically accelerate the settling rate. The test should be carried out at average room temperature, and within three to four hours after withdrawal of the blood. Several anticoagulants can be recommended on the basis of experimental and practical observations. One-half of a cubic centimeter of 3.8 per cent sodium citrate mixed with 4.5 cubic centimeters of blood has been found satisfactory. We prefer to use four milligrams of dry potassium oxalate and six milligrams of dry ammonium oxalate mixed with five cubic centimeters of blood, thereby avoiding dilutions of the blood so that the balance may be used for other purposes.

It is possible, of course, that other factors may influence the suspension of the erythrocytes, but they seem to be of little clinical significance. For example, neither the total plasma protein, nor the plasma albumin-globulin ratio seems to be correlated. Plasma lipoids, and blood sugar levels seem to make no difference. Venous, arterial, and capillary blood reacts in a uniform manner. The size and shape of the individual red cells have a negligible effect on the sedimentation velocity. An excess of bile salts may possibly increase the rate.

TECHNIC

The following technic gives effect to the foregoing factors.

1. Discharge five cubic centimeters of freshly drawn venous blood into a test tube containing four milligrams of potassium oxalate and six milligrams of ammonium oxalate. Invert the tube at least five times.

2. Fill a Westergren tube to the 20 centimeter mark, and suspend or clamp the tube in a vertical position. Carry out the test at moderate room temperature.

3. Read the upper level of the settling corpuscles at the end of one hour.

4. If a corrected rate for anemia is desired, fill a Wintrobe tube to the ten centimeter mark, and note the upper level of the column of red cells at the end of one hour. Then centrifugate the tube about twenty minutes at 3,000 revolutions and note the volumes of packed cells in millimeters. Find the corrected rate by reference to the Wintrobe-Landsberg chart.

EVALUATION OF THE SEDIMENTATION RATE

Although the mechanism of corpuscle sedimentation is understood, the cause of this instability is not known, and a full evaluation of the test is impossible. The reaction, for the present, at least, must be considered to be nonspecific. It is comparable to fever, tachycardia, leukocytosis, and possibly anorexia, loss of weight or fatigue. It is generally agreed as Fahraeus stated, that a diminished stability of the blood is "one of the most common general reactions of the organism to disease, perhaps the most common." Compared with fever, tachycardia and leukocytosis it is a delayed reaction. Moreover it is, on the whole, a more persistent reaction, because the restitution of a normal rate is slow. It is said that the suspension stability of the blood more truly reflects the condition of the patient than does the fever or leukocyte count, particularly in pelvic cellulitis, rheumatic fever, and infectious arthritis. It is a more valuable guide in the activity of phthisis than either the temperature or weight curve.

In general there is an increased sedimentation rate in nearly all acute general infections, as well as certain local acute infections, and the degree of acceleration tends to parallel the severity of the inflammatory process. A knowledge of these in-

dividual reactions is of some assistance in differential diagnosis. For example, the sedimentation rate of the blood is greatly increased in acute salpingitis, but only moderately or slightly increased in acute appendicitis. High rates prevail in the acute exanthemata, and very rapid sedimentation occurs in lobar pneumonia, although in both, the maximal increase may not occur until the fever is beginning to subside. Chronic localized infections such as those about roots of the teeth, tonsillitis, sinusitis, and chronic peptic ulcer usually do not affect the rate. On the other hand localized suppuration, such as suppurative mastoiditis, pulmonary abscess, purulent bronchiectasis, gallbladder empyema, pyosalpinx and liver abscess cause a pronounced acceleration of the sedimentation rate. The appearance of such a rate, if repeatedly confirmed in a condition otherwise thought to be of a simple self-limited nature, suggests a guarded prognosis. As a rule the rate is increased in malignancies, particularly those of the ulcerative type involving the viscera; malignancies of the extremities, skin, and those of the papillary type, as well as benign tumors, are less likely to affect the rate. There may be a slight increase in the rate during menstruation, and a sharp increase during the latter months of pregnancy.

The greatest services to be expected from a determination of the sedimentation rate in everyday work are first, its use in distinguishing between the more or less occult organic diseases and those of functional nature; and second, its use as an indicator of subsiding activity of infectious processes. Almost daily, in fact several times a day, the general practitioner may be confronted with these problems. Any test so simply performed, so widely applicable and so available, which will help in these important differentiations, should be especially welcome in spite of its facilities, exceptions, and limitations.

Not long ago, a colleague and I were confronted with a differential diagnosis between tuberculosis, bacterial endocarditis and a form of psychoneurosis. On clinical grounds we inclined to the latter, but a fever chart kept by the patient's mother showed a long period of daily temperature elevation varying from one to two degrees. A sedimentation test carried out at the patient's home was well within normal limits. This observation led us to examine the thermometer which had been used, and we discovered an error of approximately 1.5 degrees. On the other hand, another patient who was well nourished, afebrile at the time of examination and only slightly anemic, had a blood sedimentation rate of 55 millimeters at the end of one hour. In spite of negative findings on physical examination, a tuberculin test was strongly positive, and a roentgenogram revealed unmistakable evidence of pulmonary tuberculosis. Her outstanding symptom of fatigue had previously been considered to be of purely functional origin.

CONCLUSIONS

1. The experience of many investigators confirms the statement that the sedimentation test is a valuable addition to methods of examination.

2. Keeping in mind a few essential factors in technic, the test is easily carried out in the average physician's office.

3. Within limits the test is reliable. It must be remembered that it is nonspecific, that repeated observations are of more value than isolated ones, and that a normal sedimentation velocity may be found even when the presence of certain diseases is obvious.

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USE OF VITALLIUM FOR FIXATION OF FRACTURES*

Willis C. Campbell, M.D., Memphis, Tennessee

A consideration of the material employed in the internal fixation of fractures presupposes the exercise of discretion in the selection of fractures to be treated by open reduction and internal fixation. Obviously, the treatment of every fracture should be chosen with the view of affording the best functional result. The simplest and safest method of obtaining this result is the most desirable. Reduction by manual force, followed by external immobilization or traction, is adequate in the vast majority of cases. In certain types of fractures, however, open reduction and some means of internal fixation offer the most favorable prospect of satisfactory function.

Acute fractures which should be treated by open reduction and internal fixation are of two types: first, those wherein the fragments cannot

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Fig. 1. A. Typical acute fracture of the humerus.

be placed in proper position and so maintained by conservative measures, or treatment by such measures has failed to restore adequate alignment to prevent serious disability or deformity; and second, those wherein sufficiently accurate alignment to afford good function has been or can be obtained by closed reduction, yet the degree of displacement warrants the expectation of some deformity, slow union, and a slight permanent impairment of function. Since the introduction of vitallium, the risks attendant upon open reduction and plating of the latter type of fracture are negligible, and the probability of securing better function with a shorter period of disability justifies the surgery involved.

Internal fixation of fractures as a routine measure was first described in 1905 by Lane, who introduced his steel plate for this purpose. The method was later largely abandoned because of the disastrous results incident to reaction of the tissues to metal, and to infection as a result of faulty technic. A comparatively small number of surgeons continued to use fixation by the Lane plate in selected cases only, but the majority of the plates were removed after union became solid, because of late complications from foreign body reaction. Also, following the application of these plates, callous formation was apparently inhibited, and nonunion and late refracture were not uncommon, which often necessitated removal and a second, more extensive operation.



Fig. 2. A. Comminuted oblique fracture of the tibia and fibula.



Fig. 1. B. Shows solid union two months after open reduction with application of vitallium plate and screws.

There has always been a demand for some material, preferably absorbable, which would cause no reaction, yet would maintain complete fixation until union was solid. Thus far, no such material has been discovered. Recently, however, a new metal, a nonferrous alloy of cobalt, chromium and molybdenum, has been introduced by Drs. Charles Venable and Walter Stuck, of San Antonio, Texas, under the trade name of vitallium. This material has long been used for making dental plates and bridges, without caus-

ing the slightest reaction even after the elapse of years. Venable conducted animal and chemical experiments with plates and screws of vitallium, as well as plates and screws of other metals employed for internal fixation. He found by animal experiments that vitallium apparently incited no reaction as demonstrated by roentgenograms in the living, and by autopsy after union was solid,



Fig. 2. B. Shows satisfactory position of the fracture following manipulation and application of plaster cast.

whereas the ferrous metals, such as steel and vanadium, gave rise to a definite tissue reaction or necrosis, with atrophic changes in the bones about the screws. He also demonstrated that vitallium did not bring about oxidation or other chemical change in blood serum or in salt solution, the fluid remaining perfectly clear. On the other hand, the ferrous metals in common use caused an excessive precipitate, as indicated by ferrous oxide in large quantities. He also demonstrated by the galvanometer that vitallium had no electrolytic effect, while the ferrous metals induced a definite electric current resulting in electrolysis. He therefore assumed that electrolysis is responsible for tissue reaction after the use of ferrous material. In the past, Venable has been an advocate of internal fixation by ferrous metal when feasible in certain fractures, but he has found in actual practice that vitallium is far more satisfactory. Regardless of these reports, some surgeons claim that there is no reaction when metals containing steel, such as vanadium, are inserted for fixation, provided the technic of application is efficient. They also state that vitallium is inferior to the ferrous metals in that it possesses less strength and is more brittle. This is true; however, vitallium possesses sufficient strength for practical purposes in clinical work.

Because of the many disastrous results observed, the author formerly avoided the use of metal plates when possible, and strongly condemned their use. After the introduction of this new material and the proof submitted by Venable and Stuck, we began the use of vitallium in selected cases in February, 1937. The results were so successful that we continued its use and to the present time have employed this material in 108 cases. Roentgenograms made over a period of several months have shown no evidence of absorption of the bone about the screws, nor of inflammatory changes in the soft tissues. Callus appears to have covered the plate partially in many of the cases. We have removed eight plates at periods varying from four to ten months after



Fig. 2. C. Illustrates loss of position in plaster cast.

operation. In every case the screws were firmly imbedded in the bone, necessitating removal with a screw driver. There was no evidence of corrosion or tarnishing of the metal, nor was the soft tissue about the plates stained; rather, it appeared to be normal scar and fibrous tissue such as is

found in the healing of any surgical wound. In two cases, removal of callus from over the plate was necessary. Accurate alignment of the fragments was maintained in all fractures with the exception of one. This fracture was in the upper end of the femur and the plate was under considerable tension; moreover, the plate was one of the earlier types manufactured, and the alloy did not possess the malleability or strength of the newer types.

We have reviewed a large number of fractures from which wires, pins and screws of ferrous



Fig. 2. D. Same patient four months after open reduction and internal fixation with vitallium plate and screws. This is a border line case in which deformity would have been accepted before present methods of open reduction and plating were adopted.

materials, Parham bands, and steel plates of the Lane type were removed. Ordinary wire was found to produce a definite reaction. Rustless steel wire, on the other hand, incited practically no reaction. Smith-Petersen nails of rustless steel, of which we have removed forty, incited two types of reaction: proliferation, in which the nail was held tightly and removal was difficult, necessitating the use of special instruments; and those wherein there were atrophic and necrotic changes and the nail was easily extracted with an ordinary hemostat or Kocher clamp. Only two were of the first type, whereas thirty-eight were of the second. In all instances, cultures from the nails were negative. We have not used vitallium nails, because some of those first manufac-



Fig. 3. A. Acute compound fracture potentially infected from without.

tured broke after weight bearing; we understand, however, that nails of this material will now resist weight bearing. Steel nails and wires have proved satisfactory in a high percentage of cases. Steel plates have been unsatisfactory in the author's experience; in order to estimate more accurately the reasons for the present controversy regarding steel plates, however, a careful study has been made of thirty-one cases wherein this material was applied by surgeons elsewhere and subsequently removed by the author.

Seventeen of the plates apparently were efficiently applied. In the remainder, the screws



Fig. 3. B. Position of the fragments following routine debridement of compound wound and plating of fibula through second incision. Sulfanilamide used prophylactically. Wound healed by primary intention.

were of an unsuitable type, the plates were either too small or too weak, or the screws were improperly applied. For example, we found one or more screws inserted through the fragments or through the fracture site. Infection was or had been present in fourteen of the thirty-one cases. In one case, that of a boy, twelve years of age, fracture recurred after four years of solid union. On removal of the plates not efficiently applied, a definite tissue reaction was observed. In the roentgenograms atrophic changes were seen about the screws. In those wherein the plates had apparently been efficiently applied and there was solid union, as with the nails, there were two types



Fig. 3. C. End result seven months following operation. Solid bony union at fracture sites.

of reaction: atrophy and sclerosis. Atrophic changes were observed by roentgenograms and at operation in all except four cases; in these four the reaction was sclerotic in type and the plate was completely covered by dense new bone. Removal was necessary because of a local reaction, as indicated by pain, often with swelling.

This survey indicates that ferrous materials often induce an unfavorable tissue reaction about the fracture site; yet obviously inefficient mechanical fixation is a definite factor in producing complications requiring removal of the material. Laxity in the practice of strict asepsis also contributes to a not inconsiderable number of disastrous results following open reduction and internal fixation. Exposure converts a simple fracture into a compound fracture, with many of its risks. With proper observance of asepsis, however, and accurate fixation by vitallium, the dangers of open reduction and internal fixation are minimized, and are outweighed by the advantages of replacement and maintenance of the fragments in anatomic position.

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INSOMNIA*

J. Stuart McQuiston, M.D., F.A.C.P.
Cedar Rapids

To those of us who do not know the tortures of restless fretful sleep each night, the subject of insomnia may seem inconsequential. If sleep does not occur without concern on our part it affects a considerable part of our life, since one-third of our lives is usually devoted to sleep. A check-up of run-of-the-mill office patients will show that poor sleep is a common symptom, and frequently the chief complaint. The startling rise in the sale of sleeping tablets for self medication over the drug counters is an indication of a need on the part of the patients and suggests an inadequacy on the part of the physician. For these and other reasons it seems worthwhile to discuss the age old subject of insomnia.

From experience we have more or less tacitly accepted certain ideas regarding sleep, such as mental fatigue and excitement causing a disturbed night's rest. One difficulty in studying this problem has been the lack of any adequate method of observation. It is well known that a sleeper changes his position many times during the night. This is an expression of motor activity. Thirty or more bodily stirs are average for a night. The fewer the changes the greater the rest. The first studies along this line were from actual observation but this was found to be inadequate. At present the studies of Giddings are based on an ingenious bed, fitted electrically to record any movement of the sleeper but not the posture assumed. By this method of study Giddings has been able to gather a wealth of information on normal sleep patterns, and factors affecting this pattern. His results indicated that a child has a definite sleep pattern which is rarely disturbed except through sickness or certain experimental conditions. Drinking six ounces of warm milk seems to produce quiet sleep in

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normal children. Other beverages have no constant effect and three-fifths of a grain of caffeine produced no more restless sleep than orange juice. A large amount of food at the evening meal resulted in marked restlessness. Warm or cold baths seemed to have no constant effect in normal children. A child sleeps more quietly in cold than hot weather. Emotional disturbances have an untoward effect on the sleep pattern as illustrated by this experiment. Study each night did not disturb the pattern except when this was done in preparation for an examination the following day. Mental and physical activity prior to sleep did not alter the standard pattern in the group studied. All studies contained control groups. Sleep is restless at the beginning, then quiet, becoming more restless as the time for awakening is approached. Further experiences of this author should be very helpful in studying this problem both in normal persons and patients with insomnia.

The quality of sleep as gauged by the sleepers' comments is said to have been improved by the addition of calcium, but this study was on a small group and the criterion of improvements seems inadequate. Mauer, and others, found that one-third grains of cevitamic acid daily produced sleep in a majority of insomniacs. An overdose produced sound sleep.

That real or imaginary insomnia is increasing is amply proved by the tremendous increase in the sale of sleeping tablets. They are said to be as good sellers as aspirin and laxatives. Hambourger in a report in April, 1939, stated that more than 1,200,000,000 grains of barbituric acid derivatives were sold in the United States in 1936. Undoubtedly more have been sold in 1937 and 1938. If we can assume this to express a measure of the need for something to "quiet the nerves" and produce a restful night's sleep, we have a sizeable problem on our hands. One wonders why there is such need. Can the struggle to reduce the working hours and provide more leisure time be having an untoward effect in a large group of our people? Are they unprepared to cope with too much free time? Is there too much time for introspection, brooding and worry? Or does the increased tempo of life since the world war account for this national nervousness and insomnia? Certainly the struggle for economic security is a problem that did not confront so many in earlier years, yet I do not recall that patients receiving county aid complain any more of insomnia than private patients. Perhaps this group consists of those who are supporting themselves but never feel secure against the future, the individuals who at anytime may be replaced by younger men, or those who because of group affiliation may lose their livelihood through no fault of their own. Another thought comes to mind. How much of the use of quieting pills can be attributed to the constant barrage of radio and newspaper advertisements about "tired" and "jangled" nerves and the needs for restful sleep to restore "lost energy" and supply increased vitality? Undoubtedly this fear advertising increases the use of sedatives.

What part does the intense search for success play? Are we all trying "to keep up with the Joneses" financially and socially? Has the search for happiness led us into a constant round of so-called pleasures until we are satiated? Have we forgotten that true peace of mind and real happiness come from within? I leave these random thoughts for you to supply the answers.

One thing we can say from a factual standpoint is that this increase in self medication has led to a marked increase in suicides from barbituric acid derivatives, as well as many deaths attributed to "accidental overdosage of sleeping tablets" which we see reported so commonly in the daily newspaper. Hambourger states that the total number of suicidal deaths by barbiturates in 1936 was close to 300 and probably exceeded 400 in 1937. He also stated that the number of suicides by barbiturates has shown a definite upward trend during the past decade, especially marked since 1933 although the frequency of total suicides has declined since 1933. With this wave of self medication we are seeing more cases of toxicity from the barbiturates and other sedatives, with manifestations such as skin reactions, agranulocytosis and cases of habituation.

I have abstracted a summary of the theories of sleep as collected by Loehr. According to the osmotic theory the nerve cells become saturated with water due to their functional activity and as a consequence their excitability is reduced. This water is removed from the lymph, the blood becomes concentrated, flows more slowly and finally produces sleep. This theory fails when we note that patients with polycythemia are restless and do not sleep excessively.

According to the dendritic theory proposed by Duval in 1895, sleep was thought to be due to a retraction of the dendrites of the nerve cells; thus contact with the higher centers was interrupted. No proof of this theory has been offered and it is now discarded. Pieron proposed the toxic theory on the basis of the following experiments. He subjected dogs to prolonged periods without sleep, then isolated a pro-

duct from the blood and spinal fluid which he termed hypnotoxin. When this material was injected into intact animals it produced somnolence. The objections to this idea are that we can sleep at almost any time whether "toxic" or not and others can awaken at a prefixed time when they put their minds to it, be it one or five hours after going to sleep.

Others have attributed sleep to alterations of the blood lactic acid, cholesterol, carbon dioxide, "leukomaines" and products of metabolism in general. Experiments fail to confirm these ideas.

Shepard's theory states that "as we go to sleep we become absorbed in a mass or complex of fatigue sensations. These tend strongly to inhibit other processes, especially motor activity and consciousness of strain sensations from the muscles." The same objections are raised against this theory as against previous theories.

Freud has postulated that sleep is a mechanism of escape into a paradisial world of intra-uterine security. Insomnia would be a manifestation of inadequately repressed complexes. Among the modern theories we hear first of Pavlov who said sleep was a general internal inhibition based on conditioned reflexes. This idea was developed along the same lines as his experiments in dogs wherein salivation was produced as a conditioned reflex.

There is evidence to support the theory of a sleep center. Demole for instance found that injections of calcium chloride into the gray substance of the subthalamic region produced profound sleep. Hypnotic drugs are concentrated almost entirely in the basal ganglion and none in the cortex. Morphine is recovered from the floor of the third ventricle and cerebral hemispheres but never from the midbrain, pons, medulla or cerebellum. The barbituric acid derivatives are concentrated in the thalamus and to a lesser degree in the corpus striatum, but never in the hemispheres, medulla, pons, or cerebellum. Drugs act as depressants on the parts in which they are found. Thus if a sleep center was located in the floor of the third ventricle these drugs should cause insomnia so that we should more properly call this portion of the brain the center for the waking state. Tumors of the third ventricle are associated with somnolence.

Nathaniel Kleitman's beliefs have probably been accepted to a greater extent than any other current proposal. He combines some parts of the previously mentioned theories, and cites six cardinal points: first, sleep is an easily reversible inactivity of the highest functional centers of the cerebral cortex; second, the inactivity is due to a functional break between the cerebral cortex and the other parts of the nervous system; third, the functional break results from a marked decrease in the number of different impulses to the sensorium, especially proprioceptive impulses which depend upon the degree of muscle tone maintained; fourth, sleep is due to fatigue of the neuromuscular mechanism concerned in the maintenance of muscle tone; fifth, in the absence of such fatigue sleep may result from complete muscular relaxation, intentional or unintentional; and sixth, diurnal alternation of wakefulness and sleep is a conditioned phenomenon. It will be noted that the classifications of the insomnias vary in their subdivisions depending on the amount of psychiatric background of the author. I will try to combine the various classifications to some extent. That of Feiling seems the most useful and simple and I will follow it with modifications. All authors are agreed to a division of secondary and primary insomnias.

Under secondary insomnia we list first, bad habits, such as lying in bed late in the morning, dissipation, and dietary indiscretions at night; second, purely external or environmental causes, such as noise, annoying light, uncomfortable bed, crowding, uncomfortable temperature, lack of fresh air, and presence of drafts; and third, physical diseases. We divide this last group into four types of diseases; first, pain or severe discomfort from injury or disease, such as pruritis; second, toxemic states, such as fevers, infectious diseases, uremia, alcoholism and hyperthyroidism; third, disorders of the cerebral circulation such as hypertensive heart disease, severe anemias and polycythemia; and fourth, structural diseases of the brain, such as arteriosclerosis, brain tumor, syphilis, senile changes, acute and chronic encephalitis and posttraumatic states. These comprise the secondary group where the causal factor is apparent, and treatment will vary with the ability to remedy the cause. Most of our clinical problems fall into the second large group or primary insomnia. Bethea calls this group the psychopathologic conditions. He divides them as follows:

1. Profound mood fixations of depression or elation. These individuals characteristically tend to awaken early, and fill the remaining hours with depressive preoccupations and imaginations.

2. Those in relation to content problems such as simple preoccupations, brooding, worries of business, social, domestic or sexual nature, grief, remorse, and suspicions. These people have difficulty in falling asleep.

3. Those in relation to complaints about sleep,

without actual alteration in the total amount and kind of sleep, due to frustrations, disappointments, and reactions to strain and responsibility. These patients usually blame poor sleep for the mismanagement of their life situation. They have poor insight and frequently resort to self medication.

TREATMENT

The first step in treatment is the development of a complete history, including the essential points of the physical complaint as well as the pattern of the insomnia. Is it difficult to get to sleep? Is sleep fitful? Is it the type that causes insomnia in the early hours of the morning? The final step in the history is a discussion and evaluation of the make-up of the individual from a psychiatric viewpoint. This latter need not be in the nature of a psychoanalysis, but should be a simple and open discussion of fears, worries and problems that might beset the individual patient. One should not forget the simple questions relative to the effect environmental conditions might have on sleep.

After this careful history has been taken and a thorough physical examination made, and any indicated laboratory studies have been carried out, we should be in a position to decide whether the case is one of primary or secondary insomnia.

The secondary type presents a minor problem and will be discussed first. Those cases due to bad habits respond to change in habits. Those due to environmental conditions should not present much difficulty if the etiologic factor can be corrected. Along this line I recall a recent broadcast extolling the virtues of a place in New York called the Sleep Shop managed by Norman Dyne. He successfully treats environmental insomnia by reproducing familiar sounds which patients have associated with sleep, such as the chirping of crickets, the wind in the trees or the sound of distant trains.

Those cases found to be due to some physical disease will respond to the extent that we are able to correct or control the physical condition. It is in this group that analgesics and even narcotics are useful, if pain is a factor. At this point it might not be amiss to mention that from time to time articles have appeared citing a 50 per cent incidence of insomnia in patients with errors of refraction. Proper refraction produced cure of the insomnia in more than 85 per cent without the use of sedatives.

We have remaining now that group with primary insomnia, and unfortunately most of our cases fall into this group. Treatment here is usually divided into three general types, physiotherapy, drugs and psychotherapy. Physiotherapy includes warm baths, cold packs and massage. The subject of drugs in insomnia grows month by month as the drug houses continue to manufacture new agents for inducing sleep. Each competes with another of a slightly different structure, usually a barbituric acid derivative. Chloral hydrate, one of the oldest hypnotics, is still efficacious. It has few side actions, although there is some depression of the circulatory and respiratory system; it acts rapidly and the effects last from six to eight hours, and it is not habit-forming to any extent. It may be combined with bromides but is incompatible with alcohol. The U.S.P. dose is eight grains (0.5 grams) but the usual dose is ten to twenty grains.

The bromides are the next large group. They are soluble in water and are usually prescribed in a liquid form; however, effervescent tablets are available. They act in about thirty minutes and the effect lasts from four to six hours. They do not relieve pain and are not habit-forming. There is some tendency to "hangover," and skin eruptions are common reactions from continued dosage. Since the determination of blood bromides has become more common, some mental confusions have been found to be due to a high concentration of bromide in the blood. By and large there is a wide margin of safety from a single dose, several hundred grains having been taken with impunity. The average dose is twenty to thirty grains. Paraldehyde is not used as much as formerly, except in delirium tremens. It acts rapidly, has a low toxicity, and may be used rectally. It does not depress the respiratory or circulatory systems but may cause some bronchial irritation. The dose of the elixir is four fluid drams.

We now come to the barbiturates whose number is legion and still increasing. They are best divided according to Wagner into the rapidly acting group such as amytal, pentobarbital or seconal, and the slowly acting group such as barbital, phenobarbital, neonal or ipral. They are slightly habit-forming and cumulative in effect. There is little analgesic action, and patients frequently have a "hangover." In my experience, vertigo is a common complaint from use of the barbiturates. Pyrexia and erythematous eruptions occur. The dose depends on the particular variety used. Self medication with this group is common as indicated in the earlier part of the discussion. One should not continue the use of the same product over too long a period.

Codeine and morphine are indicated when sleeplessness is the result of pain. Respiratory

depression is common from higher dosage. Apomorphine hydrochloride according to Bethea is "one of the most powerful and certain hypnotics known. Its intense effect as a nauseant and emetic renders it available only for certain selected cases, especially hysteria major and alcoholic psychosis. One of the miracles of medicine is to see the laughing, screaming, cursing, or belligerent patient empty his stomach and be sweetly sleeping within a few minutes after a hypodermic injection of 1/12 grain of this oft neglected drug."

The success of psychotherapy depends on the confidence which the patient has in the physician. By explaining and rationalizing the problem and conflicts we may help these people to a better understanding of their situation.

Treatment of the primary group demands a judicious mixture of all the three approaches. In the depression and personality disorders hydrotherapy is especially efficacious. The choice of a drug, if one is used, depends on the sleep pattern. If the difficulty is in getting to sleep, bromide or one of the rapidly acting barbiturates is indicated. If sleep is light and fitful, one of the slowly acting barbiturates or chloral should be used. If early waking is the difficulty a fast acting barbiturate of short duration is indicated on awakening, or a prolonged drug may be used on retiring. The need of the patient should determine the drug used. One should not neglect the benefit of physical fatigue and the development of a ritual about going to bed. It should be suggested that the patient is going to bed to rest, not necessarily to sleep and sleep will follow. Jacobson's Progressive Relaxation is recommended for reading both by the patient and the physician.

CONCLUSIONS

1. Insomnia presents a challenge to modern medicine.
2. The social and economic aspects of the increase in insomnia and self medication are considered.
3. All cases should be thoroughly studied and classified.
4. Treatment consists of the judicious combination of physiotherapy, drugs and psychotherapy.

313 Higley Building.

Discussion

Dr. Matthew T. Morton, Estherville: The essayist is to be commended for the way he has handled the subject of insomnia, when one reflects that so little is known about this normal physiologic function, as compared to our knowledge of gastro-intestinal, cardiovascular and renal physiology. He has spoken to you as an internist, but I must discuss the subject from the general practitioner's standpoint. Approaching the problem from an age period viewpoint, I find that one of the principal causes of infantile insomnia is over-solicitous attention of fond parents. Other causes may be badly excoriated buttocks, irritated foreskin, uncrupted teeth, malnutrition and acute rhinitis with its attendant obstruction of the nostrils when the child is in the horizontal position.

Nutrition and rest are the important items to keep in mind when examining the preschool child. Nasal pharyngeal obstruction due to enlarged tonsils and adenoids is a common cause of insomnia in children. The present school system is undoubtedly to blame for much nervousness during the adolescent period, especially in high school students. There is too much competition in regular school work and in extra-curricular activities, such as music, debate and drama. Many bad hygienic habits which are formed during this period are perpetuated throughout the individual's entire life. The temperamental, more apt pupils are the ones usually encouraged to attempt this work, and they are frequently the ones least suited to stand this additional nervous strain. My opinion in the matter may be severely criticized, but the problem is important enough to deserve careful consideration.

The final age group I wish to mention is the climacteric period. When a patient complains of being nervous and irritable, and unable to sleep, and if these complaints follow an operation in which all her pelvic organs were extirpated, we should turn to the endocrine products.

In discussing the use of drugs for this condition, a word should be said on the practice of selling them over the counter. I believe the doctors must assume their share of the blame. Closer cooperation between the physicians and pharmacists will do much to remedy this unethical and dangerous practice.

Dr. Frank H. Clark, Clarinda: I wish to compliment Dr. McQuiston for two things; first, for the choice of his subject; and second, for the very excellent manner in which he has presented it. This subject is of great importance to two classes of people; first, to the very unhappy individual, man, woman or child who is suffering from insomnia; and second, to the physician who is consulted by these patients and who is expected to give their case sympathetic and painstaking attention. The patient, exhausted by the loss of sleep and filled with dread and apprehension, attaches more importance to his insomnia than we sometimes think it deserves.

The physiologists are always offering new theories as to the causative factors of sleep and by what processes of nature it is brought about. Dr. McQuiston has discussed several of these theories only to admit, as they have always done, that none of them supplies a reasonable and workable solution of the problem. Medical men have recently told the laity that eight hours of sleep are not absolutely neces-

sary providing they lie still, relax completely and rest. I am afraid that the man who offered this advice has never known the tortures of sleepless nights. Sleep with complete relaxation of body and mind is necessary for a normal body. Some one has said, "Sleep, that precious physical phenomenon of which more is unknown than known, is nature's remedy. Without it, humanity is lost."

I would like to emphasize what Dr. McQuiston has said in regard to the indiscriminate use of drugs for the relief of insomnia. It is true that there has been an alarming increase in the use of sleeping potions by the public, both through self medication and prescriptions from physicians. This is due in part to the ease with which the drugs can be obtained, and the assurance from many sources that they are harmless and not habit-forming. Both of the last two statements are untrue. Their use of drugs by physicians is, in many instances, the result of our unwillingness to take the time and make the effort to study our cases carefully and arrive at the underlying causes of the insomnia, and to work out with the patient some rational and sensible form of relief. The use of hypnotics is more regrettable when we consider that they never have and never can result in a cure for insomnia. Furthermore, I believe it can be safely said that these drugs do not induce sleep. Instead they bring about a paralysis of the nerve centers causing a condition which appears to be natural sleep, but which is in fact merely unconsciousness. Their use does not reach the cause, they are all more or less habit-forming, and their indiscriminate sale to the public should be controlled by law. It certainly behooves us as physicians to lend our hearty support to some good plan to control the dispensing of these drugs.

It has been my privilege recently to have seen a fairly large number of women suffering from various neuroses associated with the menopause. These women ranged in age from forty to sixty years. It was interesting to note that 90 per cent of these women suffered from various degrees of sleeplessness. It was also interesting to find that a large percentage of these women with insomnia were benefited or relieved completely by the use of some one of the newer hormone preparations.

SILK AND THE SURGICAL WOUND

MERLE J. BROWN, M.D., M.Sc., Davenport

Recent progress in surgery has brought with it a renewed interest in wound healing and the reemployment of silk. Healing by first intention is more common now than in the era before aseptic surgery. A review of the literature has attested the fact that morbidity of complicating wound infections has been reduced by the ever-increasing use of silk.

The first use of twisted silk was made by Ambrose Paré about 1535, in the repair of harelip and similar wounds. Miller in 1848 wrote that the preferable mode of effecting accurate apposition of a wound was not by the insertion of numerous dragging stitches but by the use of position and isinglass plaster. About 1870 Lister promulgated his principles of asepsis which improved the healing of wounds. Through the influence of Kocher, Halsted began to use silk in 1883, antedating the introduction of rubber gloves in aseptic surgery by Bloodgood in 1889. It is evident that silk in Halsted's hands gave better wound healing even before aseptic surgery was fully developed. In spite of the splendid observations and teachings of the Halsted school, the widespread use of silk has come only since Whipple popularized its use. He emphasized the Halsted principles by enumerating the common errors to avoid; tight ligatures, mass ligatures, blunt scissor dissection, careless hemostasis, low grades of silk, combination of silk and catgut, use of silk in any but a sterile field, and continuous sutures. Whipple stated in 1933 that a surgeon's percentage of clean wounds is an index to his measures of asepsis, surgical philosophy, attitude toward his patient's welfare, and the improvement of his art and science.

The early refusal of surgeons to use silk in surgical wounds is probably based on adverse reports in the literature. Duma in 1903 stated that wounds sutured with braided silk apparently united but that suppuration occurred later and did not cease until the silk was removed. This same year Murphy stated he removed braided silk from two cases which had been inserted ten years previously. Whiteford in 1903 theorized that a suture which united constantly moving muscles gradually cut its way through until it laid loose among the tissues, and then became encysted or sloughed from the wound. Lewis wrote that some surgeons refuse to use silk because it is non-absorbable, and that many surgeons object to its use in intestinal anastomosis on the theory that it may cause ulcers, especially in the jejunum after gastro-enterostomy. Whipple has stated that a certain amount of experience is required before silk can be successfully used and that surgeons who have a tendency to putter have this characteristic accentuated by its employment. Another minor objection to silk is that it cannot be boiled repeatedly without rapid deterioration.

Howes claimed that silk may remain as a nidus of infection but that catgut does not. However, Shambaugh and Dunphy have shown experimentally that catgut may remain as a nidus in infected wounds. Guthrie and Brown have observed clinically that chronic catgut knots will keep a surgical wound suppurating. Thompson found that fat heals poorly and that muscles should not be su-

tured. Nutrition may be jeopardized with resultant poor healing. Meleney has re-emphasized that catgut and silk should not be used together in wounds.

Duma's and Murphy's objections to braided silk are sustained, but braided silk cannot by its very nature be fine as recommended by Halsted. Whiteford's theory of sutured muscles is probably correct, but again Halsted did not recommend that muscles be sutured. The contention that silk causes ulcers in intestinal anastomosis is unfounded, because it is known that they may develop regardless of the suture material used. The point by Whipple relative to the puttering surgeon is probably the greatest objection to employment of silk.

The definite advantages of silk as suture material have been demonstrated in the literature. These advantages concisely are: increased healing by first intention, more firm healing, decreased dehiscence of surgical wounds, security of knots, sterility and safety of it as a suture material, and economy. Numerous reliable reports show that wound healing with silk approaches the perfect. A composite table of some of these reports shows at a glance the superiority of silk.

TABLE I

Authors	Number of Cases		Per cent Infected Wound		Per cent Primary Healing	
	Silk	Catgut	Silk	Catgut	Silk	Catgut
Whipple.....	1,169	810	2.2	10.8	97.8*	89.2*
Meleney.....	1,078	.....	5.9	.....	94.1	.....
Thompson....	.....	.....	.....	.....	95.0	90.0
Goff.....	1,110	1,645	4.0	10.0	96.0*	90.0*
Guthrie, et al..	470	2,047	1.27	2.9	98.73*	97.1*
Longacre.....	470 (Hernia)	246 (Hernia)	2.55	15.4	97.45*	86.4*

*These percentages obtained by subtraction of total per cent of infected wounds.

Some of the authors have reported infections as trivial and slight, or serious, but these figures have been combined in the above table. The percentage of primary wound healing is definitely higher in each of the silk series. Parsons found 12.7 per cent recurrence in all types of hernias repaired by catgut, as compared to 3.5 per cent when silk was used. Longacre presented similar figures in support of silk for repairing hernias. The need for drainage in such procedures as thyroidectomy and breast amputations has been decreased greatly by the use of silk. Trout has performed over 600 breast amputations, using silk with very good results. Guthrie, Brown and Woodhouse reported 150 thyroidectomies, only one of which was drained. Meleney thought the superiority of fine silk over catgut to be due first to better hemostasis because silk knots do not slip; second, to a minimal cellular and fluid reaction about the silk sutures; and third, to the gentleness required of the surgeon in handling the tissues.

The healing wound which has been sutured by silk is more firm than that sutured by catgut. Howes and Harvey showed experimentally that silk sutures become encysted by a fibrous capsule. During the first four days a wound is only as strong as the suture, according to these authors. In this latent period, silk maintains its strength while catgut rapidly absorbs. Howes in 1933 showed by experiment that the strength of wounds sutured by silk returned more rapidly than when catgut was employed. Howes further demonstrated that small bites of tissue with interrupted sutures gave the greatest holding power and strength to the wound.

Dehiscence of clean surgical wounds has been decreased by the use of silk sutures. Howes in his study showed that exudation was rarely present after the fifth day. He found the incidence of wound disruption was greater with catgut, indicating the unreliability of this material. Experiments of Kraissl, Kesten, and Cimiotti showed that sensitization of animals to catgut and chromic acid definitely prolonged and disturbed wound healing. They found that 52 per cent of those patients without allergic history gave a positive response when tested for sensitivity to catgut. The presence of a positive allergic response should be a positive indication for the use of silk suture.

Silk knots are more secure than those of catgut. Meleney stated that silk knots do not slip as easily as do catgut knots, particularly when wound surfaces are more or less moving, as in thyroid operations. Guthrie and Sharer found that a triple knot of No. 2 black silk, with ends cut short, offers a sense of security. Taylor's work with surgical knots showed that the safest of all knots is the triple throw of silk with all throws tied square, while the least reliable are the catgut knots. The silk or linen knot should be cut with three millimeter ends in order to preserve the safety of the knots.

The safety of a suture material depends on the degree of sterility. Meleney found that 22 of 174 specimens of catgut, or 12.5 per cent, would yield spore-forming bacteria but no pyogenic cocci. Clock stated that carefully controlled heat sterilization is the only uniformly reliable and positive method of sterilizing catgut suture material. The very thorough studies on the sterility of catgut by Clock, Meleney and Chatfield showed with accuracy the hazards the surgeon must face in using this type of suture material. In contrast to the published findings of these authors, it has been

found that silk may be completely sterilized by boiling.

Economy is a consideration in the modern hospital administration; therefore, silk should take precedence over catgut in clean surgical procedures. The market values of these materials show that catgut costs three times as much as equivalent amounts of surgical silk.

There has been a decreased morbidity and drainage incidence since the use of silk in clean surgical wounds. At the Guthrie Clinic, patients who have had appendectomies (clean cases) and who have been repaired with silk are allowed out of bed on the fourth postoperative day and discharged from the hospital on the seventh day. Those with wounds of the upper abdomen, when closed with silk, are firmly healed by the tenth or twelfth day so that a patient may be allowed out of bed and permitted to go home by the fourteenth or sixteenth postoperative day. These same postoperative periods apply to wounds in clean pelvic cases. In addition to firmness and rapidity of healing, there is a distinct scarcity of serum pockets in silk wounds as compared to catgut wounds. The morbidity and hospitalization periods are from two to five days longer for catgut than silk. This shorter hospitalization period is an economic consideration for the patient.

Guthrie, Brown, and Woodhouse reported 150 thyroidectomies in which silk was used. Only one case required drainage, but healing by first intention resulted when the drains were removed in twenty-four hours. One trivial wound infection occurred in this series of cases. The use of silk in goiter surgery has reduced the incidence of serum pockets tremendously. In breast surgery serum pockets were uniformly expected when catgut was employed as the suture and ligature material, but are rare when silk is used. Rubber sponge pressure dressings have contributed to better healing at the Guthrie Clinic.

A survey of recent literature shows that infections which have occurred when silk is used have not run a course appreciably different from those of catgut wounds. This was shown clinically by Guthrie and his co-workers, while Shambaugh and Dunphy showed experimentally that satisfactory healing takes place even in severely infected wounds. Ochsner feels that silk is particularly indicated in cases of infection since these are the cases in which healing is delayed and rupture is likely to occur. He insisted, however, that the Halsted principles in the use of silk must be followed. He reasoned that a continuous suture in the presence of infection is dangerous. Shambaugh and Dunphy showed that catgut may remain unabsorbed in infected wounds for months, acting as a nidus for infection. Guthrie and co-workers reported two patients with infected wounds in which catgut sutures were used. Drainage from these wounds continued for three months due to buried chromic catgut knots. The sinuses closed only when the knots were removed or extruded.

SUMMARY

Recent observations and writings show that wound healing when silk is used approximates the perfect. The principles laid down by Halsted for its use must be rigidly followed to secure the best results. Clean wounds sutured with silk heal more rapidly and firmly; dehiscence of wound is rare; morbidity and hospitalization periods are reduced; serum pockets are rare; and wound infections have been substantially reduced.

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NEUROSIS AND DIGESTIVE DISORDERS*

Harold C. Bone, M.D., Des Moines

That neurosis is a major cause of digestive disorders is a well-recognized fact. The majority of observers will agree that it is the most frequent cause, and not a few feel that neurosis is responsible for more digestive disturbances than all other causes combined. The term neurosis has been regarded as a waste-basket into which were dumped all cases in which a definite diagnosis could not be determined. While this view has been more or less justified in the past, we feel that it is less true today than ever before, and that it is possible to establish such a diagnosis with a high degree of accuracy. A recent report on a study of 350 cases seen at The Mayo Clinic bears out this statement. It also emphasizes the fact that a very painstaking and thorough examination is usually necessary to establish such a diagnosis accurately. In this discussion we are using the term neurosis in its broader sense to include not only the alterations of function on the physiologic level, but also the mental and emotional counterpart which is perhaps more properly referred to as a psychoneurosis. A neurosis may, of course, be coexistent with but unrelated to organic disease of the digestive tract; or it may be caused by organic disease in any part of the body. In this discussion we are considering only those cases in which the neurosis is the primary or sole factor in producing the digestive disturbances and is unrelated to any organic disease.

The entire digestive tract is under a delicately balanced nervous control. Practically all portions have a dual nerve supply, one set of nerves coming from the sympathetic system and another from the autonomic system. Stimulation of the fibers of these two systems results in exactly opposite effects on the secretory and motor functions of all the various portions of the digestive tract. Knowing this fact, the conclusion must necessarily follow that a properly functioning digestive tract is predicated upon a properly balanced interplay between these two nervous controls. In the neuroses this even balance may be upset by a psychic shock, anxiety, fear, over-fatigue, and probably many other factors. These nervous mechanisms are not within the conscious control of the cerebrum, yet they are definitely responsive to many stimuli that come to the cerebrum and higher centers. The disturbance of this nervous control has for its manifest symptoms the many functional disorders of the digestive tract that we are concerned with here.

What causes these nervous mechanisms to cease operating harmoniously, thereby resulting in digestive disorders? If there is any single comprehensive answer to this question it has not yet been revealed to us. There are many factors, however, that definitely seem to precede and accompany the onset of trouble and that must bear at least some causal relationship. Many of these factors are to be found in the patient's environment; they are such things as prolonged or repeated illness in a family, grief from various causes, overwork and lack of sleep, following prolonged or repeated infections, and fear of illness or of certain problems that the patient cannot solve. Fear is a very potent cause. Anxiety or worry over a friend's predicament, over some insignificant ailment, or over some of the problems of life seems frequently to be the precursor of this disorder. These and many other economic and social problems to which the individual cannot find an answer and to which he cannot satisfactorily adjust, appear frequently to be the precipitating cause of a neurosis. Another important factor with a definite causal relationship to many cases of neurosis is that of heredity. Many of these individuals have a definite history of nervous instability running throughout their family history. Another group contains those individuals with a definite constitutional inadequacy, either nervous or physical, or both; this group will never be able to face any reasonable proportion of the normal responsibilities that are necessarily imposed by life. Still other individuals seem to be endowed with a sensitive, highstrung nervous mechanism that runs only in high gear. They must be on the go constantly; they dislike to rest and are ambitious to do more and more. They exhaust themselves physically and nervously by their constant driving, and then often cannot understand why they should need rest. The above-mentioned hereditary and environmental factors seem to form the background upon which the majority of neuroses are based.

The symptoms and disturbances in physiology produced by these factors are numerous and varied, and spread over every part of the body. In the digestive tract they may cause disturbances of salivation, burning of the tongue, bad taste in the mouth, a lump in the throat which the patient can neither swallow nor raise up, spasm in the esophagus including cardiospasm, marked belching, vomiting soon after eating, hyperacidity or hypo-acidity, pylorospasm, duodenal stasis, lack of appetite or abnormal appetite, nausea, lack of

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proper absorption of gases and food material from the intestine, constipation, diarrhea, gas and bloating, rectal spasm, and abdominal distress or pain in varying patterns and degrees. Not infrequently the clinical history in these patients is atypical for any organic disease. On the other hand, in many instances, it may closely simulate any one or more of a large number of organic lesions which cause digestive disturbances, so that a careful differentiation must be made.

In making the diagnosis of a neurosis as the cause of digestive disorders, Alvarez and others point out that the diagnosis may and frequently should be made directly from the type of history given and the observation of the actions and attitudes of the patient. Certainly when coupled with a normal physical examination and a definite association of increased symptoms with emotional upsets, the direct evidence is strong and even if some organic disease is found later, all of the above evidence may not be attributed to it. On the other hand so many different organic lesions in the body produce digestive disorders which may, at times, be closely simulated by a neurosis, that, we must rule out many or all of these before the final diagnosis of a neurosis may be safely made. This must be done by the process of excluding other causes; it often necessitates what may appear to be much fruitless and expensive laboratory work. With all due regard to those who feel that the diagnosis should be made in the direct manner, we feel that, except in a small percentage of obviously neurotic individuals, all other reasonable possibilities in the diagnosis should be thoroughly checked, and excluded as certainly as possible, before the final conclusions are made. Only by so doing will we avoid making occasional embarrassing mistakes or overlooking some associated disease which may be a contributing factor in producing the neurosis.

When we come to the field of differential diagnosis the various possibilities are so numerous that we will give here only a brief outline of some of the general groups which may have to be excluded.

I. Organic disease in the various portions of the digestive tract.
   - A. Peptic ulcer.
   - B. Gallbladder disease.
   - C. Carcinoma.

II. Organic disease outside the digestive tract, indirectly causing digestive disorders.
   - A. In nearby organs, such as the kidney, urinary tract, pelvic organs, etc.
   - B. In distant organs, such as the heart, the lung, the brain and nervous system, etc.
   - C. Secondary to constitutional diseases; diabetes, arteriosclerosis, tuberculosis without gastro-intestinal involvement, uremia, etc.

III. Possible endocrine disturbances.
   - A. Menopause.
   - B. Hypoglycemia.
   - C. Addison's disease.
   - D. Pituitary and thyroid disease.

IV. Allergy and migraine.

This gives some idea of the range of possibilities which must be considered before one can arrive at a diagnosis. Certainly this should stimulate us to give each patient a thorough painstaking examination and to make certain laboratory tests. In many cases a complete x-ray examination of the gastro-intestinal tract is absolutely necessary before organic disease can be ruled out. A thorough examination, in addition to yielding valuable scientific data, usually gives the patient a favorable impression of the physician; the patient is then more likely to accept the diagnosis and be more cooperative in carrying out treatment.

This brings us to the first and most important element in treatment, which is to gain the full confidence and cooperation of the patient. If this cannot be done, no treatment is likely to be strikingly successful. With the patient's confidence assured, we can convince him that his trouble is not due to organic disease. The establishment of this fact is three-fourths of the therapy needed for some patients, and prompt improvement may be expected. We must be careful, however, in giving this opinion to a patient because many feel it is equivalent to telling them their troubles are all imaginary, including their actual aches and pains; and they resent this. We must promptly explain that it is not all their imagination, and that this is a real sickness just the same as organic disease, but with a different origin and treatment. A thorough discussion with the patient of the causes and treatment is then in order and the patient should be convinced that this ailment does definitely produce the symptoms of which he complains. The importance of this step is explained by Crohn as follows: "The instructive understanding and treatment of a neurotic individual and his neurosis, back of which are mental strains and unhappy incidences, is a task on the doctor. It is one which calls forth, if he is to be successful, all of his patience, his innate charm and character, his sympathetic understanding of life and its vicissitudes, and his entire array of clinical experience and scientific knowledge". This is a large order and all of us have had one or two such patients who so exhausted or annoyed us that we have not been able to make our best effort. A majority, however, can be so much improved that our efforts are worthwhile. Many of these patients need encouragement as much as anything and

many can be promised definite improvement, although it may not be rapid or without periods of discouragement.

Aggravating factors in the patient's environment should be recognized and corrected insofar as possible. In regard to those unfavorable factors which cannot be eliminated, we must help our patient to become reconciled and adjusted to them in such a manner as to relieve part of the nervous strain. A short vacation or getting out-of-doors more may be beneficial in this respect. A rather careful plan of treatment should be explained to these patients and they should be asked to return at definite intervals for follow-up observation and further advice. This enables the physician to modify treatment as seems best, to prescribe for distressing symptoms, and keeps him in contact with the patient so that he can work out a solution to the environmental problems as they arise. Analysis and careful revision of the patient's physical and mental life can be of inestimable value in the hands of a keen general practitioner.

In regard to specific directions in treatment the most important feature is *rest*. If ample physical and mental rest can be obtained, the outlook for improvement is good. Nine or ten hours of sleep at night is advisable. Unfortunately, it often is not possible to obtain adequate rest, especially mental rest. A few patients may be benefited by complete bed rest for a short time, but we believe that this is harmful to many because it gives them too much time to think and worry about their troubles. A more satisfactory regime for the majority of patients is to allow them to be up and around except for certain limited rest periods. They should be encouraged to spend much time out-of-doors when possible and, perhaps, to do some light or part-time work.

The diet is of considerable importance in treatment. Although an improper diet may have nothing to do with the cause, it may markedly increase the amount of distress seen in these patients. Generally speaking the diet should consist mainly of the smooth bland, easily-digested types of food that will tax the digestive tract the least. Any food to which the patient may have an idiosyncrasy should be eliminated. Care should be exercised to make the diet complete as to the various elements necessary for a proper diet. Diet faddism is to be condemned. Since most of these patients are troubled with a spastic type of constipation the diet should be carefully managed to regulate the bowel without resorting to any artificial means. Laxatives often prove irritating, and while they may give some immediate relief they almost invariably leave in their wake a more irritated and sensitive digestive tract. Generally speaking their use should be condemned. The bowel should be regulated by careful diet management, drinking plenty of water, establishing a regular habit time, and the use of systematic rectal dilation when a tight rectal spinchter contributes to the trouble. These measures may be supplemented by small oil retention enemas if there is a tendency to hard dry stools, metamucil or some other non-irritating bulk-producing substance, and tincture of belladonna. Finally, mineral oil or plain petrolagar by mouth may be used to overcome hard dry stools if other measures fail. The patient should not be alarmed if the bowel does not move every day.

Medication may be largely symptomatic and plays a minor rôle in treatment. However, a good nerve sedative, judiciously administered, may have a salutary effect in relieving the general nervous irritability and in improving sleep. Certainly something of this nature should be used in many patients. A good general tonic is often advisable. Patients who do a lot of belching should be told to use all of their voluntary effort to stop it. If they raise sour material they should be told that that is the natural condition of the stomach content and nothing to be alarmed about. If they have a nervous type of vomiting occurring directly after meals, the serving of dry meals with no liquids for thirty minutes before or two hours after the meal is usually effective. Other patients may require rectal administrations of chloral and bromides. Various soothing alkaline powders and charcoal may relieve gas and heart-burn. On the whole there are no specific medications which can be relied upon to relieve all distressing symptoms, and when one realizes the causes and nature of this ailment, it is only natural that medication should play a minor rôle in its treatment.

The care of the neurotic patient with digestive disturbances is usually not an easy task; however, for that reason success is all the more satisfying. The most important thing to remember is that to succeed in treatment we must have the full confidence and cooperation of our patient. The best ways to obtain this are to give the patient a thorough examination, to get an accurate complete history, and to give the patient careful conscientious attention at each subsequent visit. This not only helps gain and keep the patient's confidence, but it also insures a relatively high degree of accuracy in diagnosis.

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Discussion

Dr. George H. Clark, Oskaloosa: Dr. Bone is to be complimented upon his most excellent paper. There is little to add in discussion except a few fragmentary remarks which his paper has suggested.

The fact that neurosis and digestive disorders are closely associated is beyond any reasonable doubt. The frequency of this association is, of course, open to debate and will depend upon the individual worker. Some have mentioned figures as high as 90 per cent, which, I am confident, is too high for average general practice. The majority of authors report an incident of from 25 to 30 per cent and this is probably a safe figure to accept.

Anyone who has observed these patients can scarcely doubt that they suffer intensely. In fact, I think their actual suffering is equal to, or even greater than, that of organic disease; especially if one realizes that suffering includes many mental factors and is not merely the reception of painful afferent stimuli. Many of those who suffer from nervous indigestion come from psychoneurotic stock and their troubles are a birthright to which they were predestined. They will suffer a long series of changing complaints, developing a new one periodically in spite of the many previous ailments which have been explained and exploded by some understanding medical advisor. They will, indeed, be fortunate if they are ever able to make a rational, satisfactory and permanent adjustment to the roughness of living.

There is a large group, composed of persons who lie between the psychoneurotic and the normal stages, which is abnormally susceptible to suggestion; to this class of people I think we owe special consideration. We are frequently inclined to intimate that a mild digestive disturbance due to bad eating habits or temporary worry might be an ulcer; or we state that "if it does not clear up we must rule out an early cancer." We do this automatically, thinking to protect ourselves if matters turn out worse than we anticipate; but the patient does not forget, the seed has been sown and the harm has been done. Little do we realize how carefully many of our casual remarks are weighed by these persons and an injudicious phrase dropped by us on some such occasion may break down the last fragment of faith and courage which those people have, thus tipping the balance toward worry and introspection, with a neurosis as the eventual result.

Evidence is at hand to prove that this condition is often mis-diagnosed and mistreated. Bennett and Semrad site a series of psychoneurotic patients admitted to the Nebraska University Hospital with an average of 2.4 operations each. Of these he states that "50 per cent were totally unnecessary as shown by further study." The important thing to note from this quotation is that he said these operations were totally unnecessary, and not merely ill advised or of only possible value.

There are many reasons for these cases not being satisfactorily diagnosed and treated; but the chief reason is that these patients suffer intensely and are frequently unwilling to accept anything less than a diagnosis of severe organic disease. I will heartily agree with Dr. Bone in regard to the importance of a detailed history, a painstaking physical examination, and any necessary x-ray or laboratory work, followed by critical evaluation of this evidence before a diagnosis is made or treatment suggested. However, I fear many of us in general practice are shocked when we realize what a small percentage of our patients are willing or able to let us make an adequate examination and diagnosis; and what an alarming number of "dollar patients" we see; those who come to our office and for a dollar or two expect to tell us it "hurts here," stick out their tongue, have their pulse felt, and get a few pills. They insist that this is all they want, and all too often we acquiesce because this has been an age old custom. I wonder if they go away really satisfied.

McKinlay of Scotland says that the largest percentage of psychoneurotic patients occur in the middle class. These people are too well fixed financially to receive state aid, but they are not rich enough to spend money painlessly. They intend to pay their bills, but they must do it with hard earned money. They have no income but that which they earn, and no one to carry the financial burden while they are "laid up." This explains why they continue to work long after symptoms develop, and why they try the many quick easy cures which are suggested until their psychosis is so well-fixed that it is even more difficult to uproot. It is to be hoped that changing economic laws or customs will come to the aid of these persons.

Of those who attempt to follow sound advice, many find the path too hard and the progress too slow. These patients are often idealistically inclined; they strive for perfection in all things and therefore perfection in health. When they do not become free from symptoms they are dissatisfied and continue to search for some physician, either regular or irregular, who will better help them attain that symptomless existence which they so much desire.

Dr. R. S. Grossman, Marshalltown: Dr. Bone has given a very fine discussion of one of the difficult problems of medicine. In discussing his paper I shall only attempt to emphasize some of the points which he has already mentioned.

A few suggestions might be made as to the doctor's attitude regarding these patients. A few days ago I saw a patient whom I thought criticized our profession justly. She said, "During the past ten years I have not been able to get a doctor who had any interest in my case." Prior to that time she

had had a goiter operation and four laparotomies, and then the interest of the doctors ceased. Certainly we should give a sympathetic ear to these patients' complaints. We should listen to their entire story, the details of their business and family worries, and their domestic infelicities. Then, with a detailed conscientious examination the patient's mind will be in a receptive state to tell him that he has no cancer, no heart trouble, no tuberculosis.

The second point I wish to emphasize is the matter of changing the patient's environment which no doubt has been the cause of the anxiety, fear, and worry. In most cases it is beneficial to remove this patient from his home environment, putting him in the hospital, where none of the immediate family nor friends can see him for a time. This will give him the opportunity of telling his troubles only to his doctor, and he should be allowed to purge his mind of all worries each day. The doctor can use this opportunity to impress upon the patient that he must stop looking for a complete cure for all his ailments, and settle down to make the best of things. The patient must also be taught to create a new conversational environment, that is, he must discontinue relating his misfortunes to friends and relatives. The doctor is the only one to whom this may be told. A new environment of action should be developed. I know of one physician who was able to induce one of his patients to call on the sick and unfortunate children in her community. She became so interested in taking them flowers and trying to help them that she forgot the emotions which had been causing her own indigestion.

In the third place, I would like to remark briefly about the value of rest and sleep. The excessive fatigue from which these patients suffer is largely a matter of misspent energy. We all know it requires the same amount of energy to run a hundred yard dash as to walk that same distance. The difference in the energy output is that in the first case the energy is all spent in ten seconds and is very exhausting, while in the latter, it is distributed evenly over a longer period of time. These men and women need to be taught how to work and to play. Vacations are excellent, providing the patient comes back home better than he was when he went. Lying in bed does not always produce rest, for the mind and the sympathetic nervous system may be keeping the patient completely exhausted. Several years ago one of our large clinics reported a case of neurosis which showed the usual signs, tiredness, nervousness, and complete exhaustion with the usual cold clammy extremities. One morning the patient happened to mention that no sweating of her limbs occurred while she slept. The doctors then tried to accomplish the same thing by forced rest. Phenobarbital was given regularly and the sweating stopped at once. The hypnotic lowered the patient's nervous irritability and so decreased the number of stimuli which excited the sympathetic system. Sleep is generally looked upon in its relation to the central nervous system and not in respect to the sympathetic system. Howell's theory of sleep, however, is based on fatigue and loss of tone of the vasomotor system. Hypnotics affect both the central and sympathetic systems by relieving the stress and strain thus enabling the disordered mechanism to resume normal function. So far as we know rest and sleep are the most important factors in restoring normal tone to the sympathetic apparatus. Hypnotics should be used over a long period of time. It is better therapeutics to select a drug with which we are entirely familiar rather than change each time a new one is advertised.

SERUM TREATMENT OF PNEUMONIA*

R. N. Larimer, M.D., Sioux City

Until the introduction of serum by Pane in 1898, the treatment of pneumonia was symptomatic. Since that date new developments have come at frequent intervals so that we may now be entering a period when the mortality of pneumonia will become no greater than that of major surgery. The picture today is too well known to every physician to need extensive description; horse and rabbit serum, concentrated and effective, is widely distributed and available to most of the population. The supplying of serum to those unable to pay has become a governmental function. Laboratory methods have become simplified, and trained technicians are never far from the patient. Knowledge of the effectiveness of the serum is well known to both the physician and lay person. It is a strange irony of medical fate that when biologic methods had apparently become standardized at an almost unhoped level of effectiveness, chemistry appears with a method apparently much superior. In this short paper, only three features of serum therapy will be discussed; first, the effectiveness of serum in the treatment of pneumonia; second, certain general facts concerning typing of the organism with particular emphasis on the situation in Iowa; and third, a brief discussion of sulfapyridine with a plea for conservatism in its use at the present time.

It is only in carefully controlled series from medical centers that dependable statistics establishing the value of antipneumococcic sera can be obtained, and in evaluating these figures, numerous qualifying factors must be considered; virulence of pneumonia certainly varies in different times and places, age, social, and financial status of the patient, presence of coincidental disease, the stage of the disease, early or late, when serum is used, the size of the dose, the pres-

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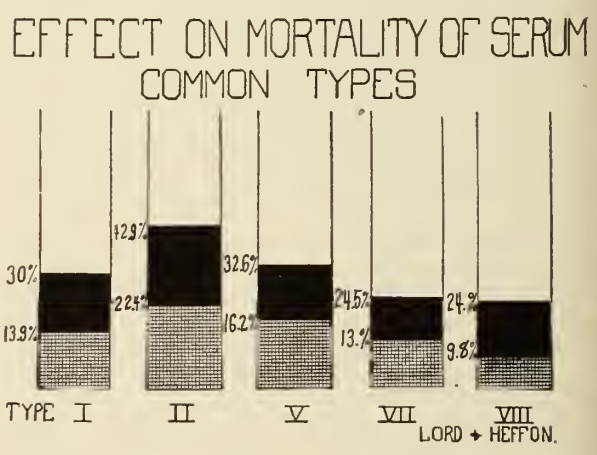
ence or absence of bacteremia, and individual responses to the infection.

Likewise it must be assumed that serum has been used correctly. Finland outlines what can be taken as a standard procedure. Serum is given intravenously. In Type I infections 60,000 to 80,000 units are used as an initial dose. "This dose is doubled: first, when more than one lobe was involved; second, when it was known that the blood culture was positive; third, in pregnant or recently paturient women; or fourth, in acutely ill patients when treatment was begun late in the disease." The average total amount of serum used is 138,000 units. Types V and VII receive similar large doses, Type VII averages 530,000 units. Physicians in general practice seldom have patients who can afford to pay for these large doses, but one must remember them in analyzing reported results.

Mortality figures, if correct, should show all cases observed and the results with these cases. Statistics from various centers can scarcely agree in giving equal value to these many factors; however, the results of various investigators have been briefly summarized, and the reduction in mortality rates of common types effected by the use of serum as reported by Lord and Heffron is shown in the accompanying chart. The effect of early treatment in Type I infections is reported by Cecil: 37 per cent of patients treated symptomatically died, only five per cent died if serum was administered within twenty-four hours of the onset, and only ten per cent if serum was used within four days. Bacteremic cases which comprise about 25 per cent of cases, are helped if adequately treated. Finland reports a mortality rate of 70 per cent in Type I infections, reduced by serum to 32.8 per cent. Less effect is noted in Type II; 76.1 per cent if treated expectantly, 55.8 per cent if treated with serum.

As to the relative values of sera from horses and rabbits, it is said that rabbit sera have certain advantages. Among these are higher titre in equal volumes of serum, more rapid production, economy of production, fewer patients are allergic to rabbit serum than to horse serum, and what may be most important, the immune body in rabbit serum is smaller and may penetrate tissue better than that in horse serum. Practically, however, Types I, V and VII seem to respond better to horse sera, while rabbit sera are most effective in Types II and VIII infections.

Doctors are importuned by commercial organizations to become adept in typing pneumococcus. The Neufeld reaction is made to appear simple and easy, both to do and interpret. This is not true, and in Iowa fortunately, the physician need not concern himself with this laboratory procedure. Typing centers with trained workers have been set up so that they may be conveniently used. At the present time there are 137 "typing centers" in Iowa. These stations are in charge of pathologists, physicians or laboratory workers, many of the latter two groups having attended study courses offered by the State Department of Health. The Neufeld reaction, which is the commonly described quick method of pneumococcus typing, is accurate in from 75 to 95 per cent of cases, but considerable skill in bacteriologic methods is necessary to identify the organism as well as to observe the swelling reaction. Emphasis on the collection and care of the sputum should be the physician's part in the identification of pneumococci. In adults, sputum is usually easily



available. In children, however, throat swabs or aspiration of mucus in the throat may be necessary. Drying is to be avoided, and the laboratory should have reasonably fresh specimens.

The part that the physician can and should play is best shown in statistics furnished by the State Department of Health. In Iowa during the past five years from 1,745 to 2,100 persons have died each year from lobar or bronchopneumonia. It is estimated that with this mortality rate there must be from six to seven thousand individuals who have pneumonia and 90 per cent of these from pneumococcus. In 1938, 42 per cent of lobar pneumonia and 37 per cent of bronchopneumonia deaths occurred in hospitals. Pneumococcus typing should be available to these patients with no greater effort to the physician than the writing of a hospital order. Reports from the typing centers show a marked shrinkage from the theoretical hundred per cent of typing in every pneumococcus infection. In December, 1938, only 95 sputa were

examined and 69 typed and in January, 1939, only 277 examined and 183 typed. Howard quoted Cecil as saying that "nearly half of pneumococcus infections occur during the first three months of the year." We can apply this locally by estimating that 1,000 cases might have been typed and reported during January in Iowa when only 183 were so reported.

The medical profession will shortly be exposed to an intensive advertising campaign relative to the value of sulfapyridine in the treatment of pneumonia. Education of the laity in regard to the drug will progress many times faster than did serum education. So far, the results obtained when this drug has been used are nothing short of startling. Rieman, one of the most careful and astute users of serum, reports his last 271 cases: 100 patients were treated expectantly and twenty-three died; 100 patients were treated with serum and thirteen died; 71 patients were treated with sulfapyridine and only three died. A mortality rate of 4.2 per cent in proved cases of pneumonia is almost unbelievable. Finland has reduced his best serum mortality rate to less than half, and bacteremic cases almost 75 per cent. All of these enthusiastic reports are given, however, with statements of caution. Even Perrin Long who has been most active in introducing sulfapyridine and sulfanilamide in this country, says that this work is still in the experimental stage. Rieman, quoted above, regrets the commercialization of the drug at this time because he feels that it will gain too prominent a place in pneumonia therapy before its actions are sufficiently understood, and that valuable knowledge concerning serum will be ignored.

The advantages of sulfapyridine over serum are apparent in effectiveness, economy, ease of administration in most cases, and independence from complex laboratory procedure. Disadvantages of the drug are the difficulty in determining the accurate dosage, failure to reduce the period of illness any less than non-serum treated cases, and severe drug reactions such as nausea, vomiting, anemia, leukopenia, hepatitis, renal and skin irritation, and central nervous system disturbances. So far none of these conditions has been fatal but convalescence from them has been prolonged. Kidney stones and degeneration of renal tubules are severe and permanent complications which lately are being emphasized. A sodium salt, as yet not commercially available, is used in solution by any means other than oral administration and may lessen the occurrence of toxic manifestations.

In the light of our present knowledge, the physician may follow three individual courses in treating the pneumonia patient; first, expectant treatment in which case recovery will be due to the development of active immunity; second, the giving of adequate amounts of specific anti-pneumococcic serum which produces immediate passive immunity and also changes the pneumococcus capsule so that phagocytosis and the production of active immunity are hastened; or third, the use of sulfapyridine, which apparently holds bacterial growth at a low level during which period the body may develop active immunity. Judgment alone can dictate to the physician which course or combination of courses he may follow. It would seem that the combination of serum and sulfapyridine would be the preferred method at this time. Each has a different function in the treatment. Serum acts directly on the micro-organism and increases the host's passive immunity. Sulfapyridine is apparently bacteriostatic; growth of organisms is inhibited or prevented. Both given early and adequately may be expected to have prompt effect and to allow for early recovery.

CONCLUSION

Serum therapy has proved its effectiveness. The more difficult laboratory procedures incident to the use of serum are easily available in Iowa. The use of this valuable ally should not be forgotten because of the promise of a not yet too well understood chemical substitute. Serum and sulfapyridine may well complement each other in the treatment of the pneumonia patient. Even with sulfapyridine, recovery from pneumonia is still dependent upon the individual's immune reactions overpowering the pneumococcus, and the physician should remember that sulfapyridine does nothing directly to accomplish this hoped for event.

SOME RECENT DEVELOPMENTS IN PLASTIC SURGERY*

Leo H. LaDage, M.D., Davenport

Many modifications and improvements in the fundamental principles of plastic procedures have been made in recent years. Originality for these changes is not claimed or inferred in this presentation. I wish merely to enumerate briefly and to re-emphasize in a practical manner a few of the newer ideas which are helpful for successful repair of acute injuries which might result in disfigurements or conspicuous deformities. As an opening premise in plastic work, one never should create a disfigurement or a deformity of any con-

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sequence to correct another. For example, it is best not to remove skin from the breast region of a female child to apply it elsewhere.

Anesthesia. Concerning pre- and postoperative sedatives, many plastic surgeons advise against the use of morphine in plastic work on the head and neck because this drug occasionally produces vomiting and retching, conditions which seriously interfere with surgical technic and interfere later with immobilization of the grafted area. Nembutal or amytal in appropriate doses appear to be more practicable. Because of pain and discomfort, the anesthesia should be complete before cleansing or repairing a facial wound. Local infiltration with two per cent novocain containing ten drops of adrenalin to the ounce has several advantages over general anesthesia: first, it allows the patient to cooperate; second, it does not interfere with healing; and third, it produces a minimum of postoperative restlessness and pain. Reactions to novocain do occur occasionally. Such possible reactions, however, can be avoided by testing the patient for novocain sensitivity.

Preoperative preparation. In lacerations and abrasions of the face, every effort should be made to prevent infection. Strong irritating antiseptics should be avoided. Thorough cleansing with green soap, followed by aqueous merthiolate or metaphen is preferable. Abrasions and lacerations are frequently filled with dirt or cinders. If these are not removed completely, traumatic tattooing follows almost inevitably. Cleansing is best accomplished by brushing the wound with a soft hand brush while irrigating it with hydrogen peroxide. Particles which resist removal by this means, should be removed with the aid of a small sharp scissors and tissue forceps. At the same time, all badly traumatized tissue should be excised and all lacerations should be explored for the presence of foreign material such as glass, wood, etc.

The most common acute injuries requiring plastic repair are those of the face. Too frequently fractures of the bones of the face are overlooked. X-ray pictures should be taken in any case showing excessive swelling after facial injury.

REPAIR

The end result of a primary repair is usually better than that following a secondary repair. Bleeding or even mild oozing of blood should be controlled thoroughly before one attempts to suture a wound. Too much emphasis cannot be placed on the importance of complete hemostasis because an excellent repair may be ruined by a hematoma. Hemostasis can be accomplished best by crushing the small bleeders and by tying the larger ones with fine silk. Oozing may be controlled by hot packs or cold pressure packs moistened with 1:1000 solution of adrenalin.

Lacerations going deeper than the skin should be closed layer by layer. Good approximation and the closing of pockets are essential. Flaps of subcutaneous tissue from adjacent areas may be used to fill depressions, the result of excision of traumatized tissue. A similar technic may be used to prevent adhesions between skin and bone. Fine silk is the suture of choice unless infection is anticipated. Buried silk remains inert in a clean wound, but acts as a foreign body in an infected wound. Catgut should be used as sparingly as possible as a buried suture, because of its tendency to produce a reaction. If one feels that infection is likely to develop, a small gutta percha drain should be placed in the most dependent part of the wound. The resultant dimple-like scar at the site of drainage may be repaired at a later date.

It should be remembered that skin contains elastic fibers in a definite pattern. Any laceration at an angle to these fibers will be followed by a wider separation than if the laceration is parallel to the fibers. Before suturing a widely gaping wound, it is advisable to undermine the skin on either side of the laceration. This undermining should be done between the subcutaneous tissue and the underlying fascia to preserve the circulation of the skin. If the skin is separated or lifted from its subcutaneous tissue, a prune-juice colored pigmentation causing permanent disfigurement may result. Accurate subcutaneous suturing is the best method for closure of the skin if one wishes to obtain the minimum of scarring. After satisfactory suture of a wound, a mild pressure dressing for forty-eight hours is advisable to control postoperative bleeding. An ice bag is often helpful in inhibiting bacterial growth and preventing swelling of repaired lacerated wounds.

In lacerations of the ear, the cartilage should be sutured with white silk and the skin closed in the usual manner. The normal convolutions of the ear are best maintained by splinting them with a molded moist pack of cotton in front of the ear with dry cotton back of the ear, all being held in place by a pressure bandage. To avoid the so-called cauliflower ear, the hematoma should be aspirated, or if this is impossible, an incision sufficiently large to express the blood should be made and the ear dressed as described.

Treatment of Burns. There are numerous methods for treating extensive second and third degree burns. Most of them include the use of some form of tannic or picric acid. Frequently an infection develops under the tannic eschar which, if left unchecked, may destroy the viable basal cell

layer of the skin. If this occurs, a condition similar to that of a third degree burn is then present. Evidence of infection under the eschar is an indication for thorough debridement with the patient under general anesthesia. The debrided area should then be treated with moist dressings.

Treatment of Granulating Wounds. A sizeable granulating wound should be covered by a graft as soon as it is reasonably clean. Flap grafts and free full thickness grafts are definitely contraindicated on granulating areas. Also, because of the marked disfigurement produced both at donor and recipient sites, the use of pinch grafts should be avoided. Properly applied Thierch grafts give much nicer cosmetic results on granulating wounds. The ideal time to graft a granulating wound is when the granulations are healthy, not heaped up, and when a smear made from the granulations shows less than five bacteria per high power microscopic field. The recipient area should be free from ointments and antiseptics other than saline or boric solution for twenty-four hours previous to grafting. The Thierch graft should extend beyond the edges of the granulating area and on to the normal skin for approximately one-half inch. If all the defect cannot be covered at one time, the dependent part should be the last to be grafted.

COMMENT

Frequently a grafted area breaks down after a successful take. This is usually due to a low grade staphylococcus infection which responds readily and only to a wet dressing of a mild chlorine solution. Pyocyaneus infection of a grafted area responds well to dressing saturated with one per cent acetic acid. In using a free full thickness graft to replace a burn scar, particularly in a child, it is well to bear in mind that even after the graft has apparently been successful, it may contract. A hair-bearing free full thickness graft will not necessarily bear hair after transfer. Free full thickness grafts are indicated especially in locations where color matching of the skin is important. Also, they are practicable for covering exposed surfaces of the hands and feet since these parts require thicker grafts to withstand their functions.

Fat grafts may be used to replace lost tissue and to restore contour. The donor areas are usually the abdomen and thigh. The fat should be in one piece with the fascia attached to it. One should overfill a defect about fifteen per cent to allow for postoperative absorption of the fat.

In using cartilage for grafts, one must remove the perichondrium because of the tendency of this latter structure to curl the cartilage if it is left on the grafts. If a cartilage graft should become infected, it should not be removed unless absolutely necessary. A drain should be placed in the most dependent part of the wound and the wound treated conservatively. In this way one can frequently save a large part of the cartilage.

Children are particularly prone to develop keloids following skin injury and, therefore, it is often advisable to have prophylactic x-ray treatment given by an experienced roentgenologist. Treatments should be started as soon as the stitches have been removed.

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THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

MENINGITIS CAUSED BY BACILLUS COLI

H. E. Thompson, M.D., Dubuque, Iowa
R. P. Quinn, M.D., Darlington, Wisconsin

Meningitis caused by Bacillus coli is rare. The great majority of reported cases have been in newborn infants or very young children. In adults the extremely rare cases have been secondary to lesions elsewhere in the body. The following case in an adult is of unusual interest because the meningitis was apparently the primary lesion and presumably was the result of swimming in contaminated water.

CASE REPORT

The patient, a white man sixty-four years of age, was admitted to The Finley Hospital August 12, 1939, because of "headache, some loss of hearing, muscle twitching and fever".

Family History: The patient's mother had died of cancer of the breast; his father of cerebral hemorrhage at eighty-seven years of age. Two sisters and one brother had died of unknown causes; one sister was living and well.

Past History: The patient had had mumps eight years before this admission and influenza several years before the present illness. During the winter of 1938 he was very ill with pneumonia, but had made a good recovery after anti-pneumococcic serum treatment. He had had no opera-

tions but had had treatment on several occasions for hardened ear wax.

Present Illness: Ten days before the onset of symptoms, July 30, the patient had gone to swim in a northern lake which was very "scummy probably because of algae". Three days before admission (August 9) he complained of headache which persisted all day. That night when he came home from his work as a banker he still complained of headache, was nauseated and had a temperature of 101 degrees. He went to bed without eating any supper although he had eaten breakfast and lunch. He was given a sedative and an ice-cap was placed on his head, but he had little sleep during the night and continued to complain of the pain in his head. After two enemas his bowels moved well. The headache was a very severe frontal pain but there was no dizziness. A white blood count made on August 10 was 20,500. His temperature was 98.8 degrees in the morning and 98.4 degrees in the evening. The blood pressure was 150/90. He was nauseated but retained a liquid diet. He was given a sedative twice during the day and remained in bed. He was also given two tablets of neoprontosil twice during the day. Deafness made its appearance at this time. The patient felt better on August 11, but his head hurt on movement. There was no rigidity of the neck and the reflexes were normal. The morning temperature was 99 degrees and the evening temperature was 99.4 degrees. The morning and evening pulse rates were 90 and 102 respectively. During the day he felt well enough to have a tub bath but his deafness persisted. On the morning of admission, August 12, his head still ached, his tongue was heavily coated and there was some muscle twitching of the upper and lower extremities. The blood pressure was 138/84 and the temperature 98 degrees. The pulse was 82 per minute. Because he did not feel any better he was sent to the hospital.

Physical Examination: The temperature was 99 degrees, the pulse 110 and the respiration 22 per minute. The patient was a well developed and nourished white man who was very drowsy and seemed toxic. He answered questions slowly. There was moderate rigidity of the neck and the various reflexes were sluggish. The pupils were very small (morphine); the fundi were negative. The general examination was otherwise negative.

X-ray Examination: X-ray examination of the accessory nasal sinuses showed moderate thickening of the mucous membranes of both maxillary sinuses. The ethmoids and sphenoids were clear. The frontal sinuses were poorly developed, no sinus walls being seen. Lateral views showed no evidence of the frontal sinuses. It was possible that there was an infection in the underdeveloped frontal sinuses, but this was not definite.

Spinal Fluid Examinations: A spinal puncture on August 12 yielded only ten drops of opalescent fluid. The cell count was 490 cells per cubic millimeter, one-fourth mononuclears and three-fourths polymorphonuclears. Smears showed gram-negative cocci or coccoid forms which could not be identified. On August 13, fifteen cubic centimeters of cloudy fluid showed a cell count of 1,440 cells per cubic millimeter; fifty polymorphonuclear cells to one mononuclear cell. Globulin was strongly increased; sugar, negative. Smears were negative for acid fast bacteria but showed gram-negative cocci or coccoid forms and bacilli suggestive of Bacillus coli, although this organism was not definitely identified. Cultures in broth, on Loeffler's medium and on blood agar showed the same organism. Later these gave the cultural reactions of Bacillus coli.

Course in the Hospital: After the diagnosis of meningitis was made the patient was given four 7.5 grain tablets of sulfapyridine and this dose was repeated in four hours. Subsequently he was given two tablets every four hours for five days. On the third day he was given a transfusion of 550 cubic centimeters of citrated blood. The temperature which was between 99 and 100 degrees during the first 24 hours, rose to between 100 and 102 degrees on the second day. Subsequently it fell by lysis and was normal on the fifth day. It then rose to 99.4 on two successive days after which it was normal or below normal. The pulse curve paralleled the temperature curve, the highest being 100; usually it was between 80 and 90 per minute. White blood counts done on succeeding days from August 13 to 21 were 13,800, 13,500, 13,000, 12,300, 15,000, 12,000, 18,200 and 17,500. Daily lumbar punctures were made for five days. Both the total cell count and the percentage of polymorphonuclear leukocytes gradually fell. The cell counts per cubic millimeter for each spinal fluid puncture were as follows: 490, 1,440, 940, 840, 412, 310. As the cell count diminished the globulin decreased. Tests for dextrose in the fluid first became positive on the fourth day. The organisms also disappeared from the fluid on the same day. Concomitant with the improvement in the cerebrospinal fluid there was general clinical improvement. The temperature and pulse fell, the nausea, headache and neck rigidity disappeared and the deafness improved. The patient left the hospital on the twelfth day and has remained well.

Comment: It is well known that in general,

adults are highly immune to Bacillus coli. This is due to a gradual increase of Bacillus coli agglutinins from birth. Only in rare instances is this protection overcome as it was in this case. Because the patient possessed a certain degree of immunity, the course of the disease was mild as indicated by the gradual onset, the findings in the cerebrospinal fluid, the clinical reactions and the outcome. In the present wave of enthusiasm for sulfapyridine it might be only natural to assume that the infection was controlled by this agent, since it is known to be beneficial in genito-urinary infections. However, it should be remembered that the blood transfusion added specific agglutinins to those already possessed by the patient. Certainly this was a logical procedure and probably did much to shorten the course of the disease. As regards the portal of entry, we assume that the organisms reached the meninges through the nasal passages.

DISCUSSION

The rarity of Bacillus coli meningitis is indicated by the fact that in 1926 Neal[1] could collect reports of only 42 cases. Mayers[2] in 1937 was able to add only six cases. In her analysis of over 1,500 cases of meningitis seen by the Meningitis Division of the New York Health Department, Neal found only eight cases due to the colon group of bacilli. Five of them were due to the Bacillus coli, two to Friedländer's bacillus and one was a mixed infection of Bacillus coli and other organisms. In her review of the literature, she found 36 cases due to Bacillus coli, 18 due to Friedländer's bacillus, and three each caused by Bacillus lactici aerogenes and Bacillus acidi lactici. The great majority of these cases were in infants or very young children. The oldest child in Neal's series was a girl six years of age. This is in agreement with the findings of Fothergill and Sweet[3] in an analysis of 705 cases of meningitis at the Infants' and Children's Hospitals in Boston. Up to 1933 they found nine cases, one of which was in a patient nine years and ten months of age, while the others were in children between one and five weeks of age. Incidentally blood cultures were positive for the colon bacillus in six of the seven cases in which they were made.

We have been able to find only two reports of cases in adults. Mayers cited one case in a man fifty-nine years of age, which followed prostatic resection, and stated that Magarey, West and Pellew had reported one in a woman following abortion. Our case therefore is the third on record and is unique because the meningitis was the primary lesion. However, Vonderahe and Baurichter[4] described a case in a boy eleven years of age, in whom otitis media with meningitis followed bathing in a public swimming pool. Pure cultures of Bacillus coli were obtained from the mastoid cells and the cerebrospinal fluid.

The fact that this type of meningitis is almost entirely limited to infants or very young children brings up certain questions as to the portal of entry and the pathogenesis of Bacillus coli. As regards the portal of entry Ravid[5] states that several explanations have been offered. Some of the possibilities are the aspiration or swallowing of contaminated amniotic fluid in premature respirations or in partial asphyxiation, by infection from bathing water, by infection from the finger of the obstetrician, by infection from purulent metritis of the mother or through circumcision. Ravid does not believe that these explain the high incidence of meningitis due to Bacillus coli and allied organisms in infants as contrasted with its extreme rarity in older children and adults. He cites the work of Barron and of Cooke and Bell as indicating that Bacillus coli and its allied organisms are among the many non-pathogenic bacteria to which the gastro-intestinal tract is normally especially permeable. In Ravid's opinion this explains the normal presence in human serum of various agglutinins for these bacteria. It is the result of acquired active immunity. He points out that normal agglutinin for Bacillus coli is found in much higher quantity in the blood of adults than in that of the young, and what is most significant, that in the blood of fetuses and of the newborn this agglutinin is absent. Therefore, in the very young and non-immune patients, the relatively high incidence of meningitis is best explained by the increased permeability of the gastro-intestinal tract to Bacillus coli which suddenly gaining access to the body, reaches the blood stream and localizes in the pia-arachnoid.

While the above explanation is probably true for infants it does not seem to apply in our case. A more satisfactory explanation seems to be that our patient had a lowered immunity for Bacillus coli, and that a high dosage of virulent bacteria gaining access to the nasal passages and thence to the meninges, resulted in a mild attack of meningitis.

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STATE DEPARTMENT OF HEALTH

Walter L. Bierring

Christmas Greetings

The Iowa State Department of Health Extends to Physicians and Public Health Workers of Iowa, Sincere Wishes for a Merry Christmas and a Happy New Year.

PNEUMONIA FILM AT MEDICAL MEETINGS

Beginning Monday and extending through Friday, November 6 to 10, the Iowa State Department of Health sponsored a series of medical meetings on the subject of pneumonia, arranged in cooperation with officers and members of county medical societies. Meetings were held in the following cities of central Iowa and the western half of the state: Creston, Algona, Cherokee, Spencer, Carroll, Fort Dodge, Des Moines, Council Bluffs and Shenandoah.

Interest and discussion at the meetings centered about a moving picture entitled "Management of the Pneumonias," prepared under the direction of Jesse G. M. Bullowa, M.D., clinical professor of medicine, New York University College of Medicine. The film was presented by F. E. Schmidt, M.D., of Chicago, who discussed various aspects of the treatment of pneumonia while the picture was in action. The film, extensively revised, emphasizes the importance of the typing of sputum before any form of specific therapy is instituted. The value of sulfapyridine is considered and the part played by type specific serum; combined treatment is regarded as more effective than when either the drug or serum is used alone. Nearly 350 persons, most of them physicians and including nurses, laboratory technicians and other hospital workers, were present at these meetings.

Meetings similar to those in western Iowa will be held in the eastern half of the state from December 11 to December 14. Cities in which it is anticipated that meetings will be held are: Clinton, Dubuque, Decorah, Mason City, Marshalltown, Manchester, Muscatine and Burlington. The Iowa State Department of Health greatly appreciates the interest and efforts of county medical society officers in arranging these special meetings.

PNEUMOCOCCUS STUDY COURSES

Thus far, 112 persons (85 laboratory technicians and 27 physicians) have attended pneumococcus study courses sponsored by the Iowa State Department of Health.

Pneumococcus study courses were held at the Department's State Hygienic Laboratory, Iowa City, on October 31, November 1 and 2, and during the three day period from November 7 to 9. Following is a list of thirty-five laboratory workers and seven physicians who attended:

Laboratory Workers

County	City or Town	Name	Hospital or Laboratory
Black Hawk	Waterloo	Mildred G. Patterson	Allen Memorial Hospital
Boone	Boone	Bessie M. Bryan	Boone County Hospital
Bremer	Waverly	Virginia Peacock	Mercy Hospital
Cherokee	Cherokee	Elizabeth Beisecker	Sioux Valley Hospital
Clinton	Clinton	Eileen Ernst	St. Joseph Hospital
Dallas	Perry	Mrs. P. N. Refsdal	Kings Daughters Hospital
Hamilton	Webster City	Eppie Klooster	Hamilton County Public Hospital

County	City or Town	Name	Hospital or Laboratory
Hardin	Iowa Falls	Miss A. Peterson	Ellsworth Community Hospital
Jackson	Maquoketa	Mrs. Earl V. Andrew	Office—Earl V. Andrew, M.D.
Lee	Keokuk	Clara Blakely	St. Joseph's Hospital
Lee	Keokuk	Johannes Andersen	Graham Hospital
Linn	Cedar Rapids	Ruth Beitel	St. Luke's Hospital
Linn	Cedar Rapids	Sister Annunciata	Mercy Hospital
Linn	Cedar Rapids	Lorraine Bardsley	Mercy Hospital
Madison	Winterset	Lois Hooper	Office—Drs. Hickenlooper and Wicks
Mahaska	Oskaloosa	Annis E. Black	Mahaska Hospital
Marshall	Marshalltown	Alma M. Brandt	Deaconess Hospital
Marshall	State Center	Ruby Marquardt,	
Muscatine	Muscatine	Ida A. Koehler	Bellevue Hospital
Muscatine	Muscatine	Ova D. Leggins	Benjamin Hershey Hospital
Page	Clarinda	Wayne M. Cox	State Hospital
Polk	Des Moines	Irene Carlson	Lutheran Hospital
Polk	Des Moines	Mrs. R. C. Rickabaugh	Methodist Hospital
Polk	Des Moines	Mr. H. D. Smith	Veterans Administration Facility
Poweshiek	Grinnell	Doris Butts	Community Hospital
Scott	Davenport	Mrs. Clara Kerrigan	St. Luke's Hospital
Story	Ames	Amanda Ganschow	College Hospital
Tama	Toledo	Joseph S. Strelak, Jr.	Sac and Fox Sanatorium
Union	Creston	Matilda Lanahan	Community Hospital
Warren	Indianola	Mrs. Iva Belden	Office—Drs. Shaw and Trueblood
Warren	Indianola	Inez Lukenbill	Office—Drs. Hooper and Fullgrabe
Webster	Fort Dodge	Mary Alice Stageman	Mercy Hospital
Woodbury	Sioux City	Genevieve Nesby	Lutheran Hospital
Woodbury	Sioux City	Alfred L. Carlson	Lutheran Hospital
Woodbury	Sioux City	H. E. Peebles	Woodbury County Health Unit

Attending Physicians

Dallas	Dexter	C. R. Osborn, M.D.	Chapler and Osborn Clinic
Union	Creston	H. G. Beatty, M.D.	Community Hospital

Health Officials

Appanoose	Centerville	E. G. Zimmerer, M.D.	Acting Director, Health District No. 2
Delaware	Manchester	D. M. Harris, M.D.	Assistant Director, Health District No. 3
Plymouth	Le Mars	Harry H. Ennis, M.D.	Director, Health District No. 1
Polk	Des Moines	E. N. Hesbacher, M.D.	Director, Polk County Health Unit
Webster	Fort Dodge	F. J. Austin, M.D.	Director, Health District No. 4

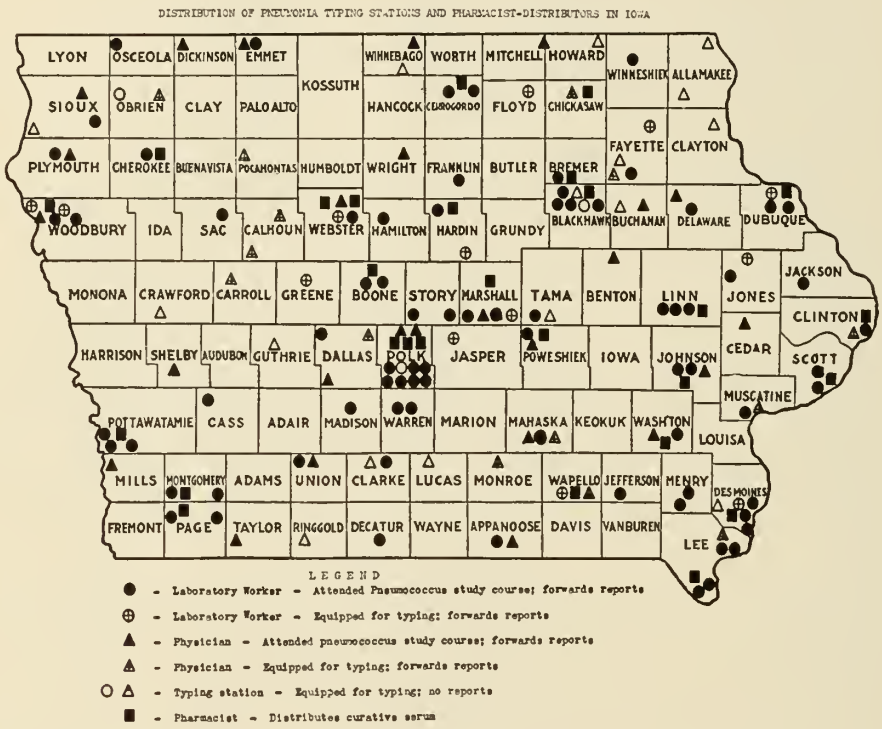
Fred M. Smith, M.D., professor of theory and practice of medicine, University of Iowa, discussed the diagnosis and treatment of pneumonia. Walter L. Bierring, M.D., State Health Commissioner, spoke on the biology of the pneumococcus and the public health aspects of pneumococcus pneumonia. M. E. Barnes, M.D., professor of hygiene and preventive medicine, University of Iowa, and Director of the State Hygienic Laboratory, emphasized the epidemiologic factors in pneumonia control. The technic of pneumococcus typing was outlined by I. H. Borts, M.D., assistant director of the State Hygienic Laboratory. The major portion of the second and third days was devoted to microscopic study of the pneumococcus and to typing. Members of the class were provided with unknown specimens containing one or several types of pneumococcus and were asked to report their findings. Opportunity was afforded to carry out the mouse inoculation test, a helpful aid in the type determination of pneumonia. The mouse test is of special value as a means of multiplying the number of pneumococci when only a few organisms are present in a sputum specimen.

TULAREMIA UNDULY PREVALENT

Many cases of tularemia are occurring in Iowa at this time. In November alone (through the twenty-fifth the department's State Hygienic Laboratory reported 82 positive agglutination reactions for tularemia. The laboratory reported positive findings for tularemia on ten serum specimens during October of this year. Judging from laboratory reports and case records, the disease is most

prevalent in central Iowa, southern central Iowa and in the eastern and southeastern parts of the state.

Counties from which one or more positive agglutination reports for tularemia were reported in October and November are: Appanoose, twelve; Polk, nine; Linn, eight; Lee and Wapello, six each; Dallas, Davis, Decatur and Warren, three each; Black Hawk, Dubuque, Jackson, Keokuk and Mahaska, two each; and Benton, Buchanan, Butler, Dickinson, Fayette, Greene, Henry, Johnson, Jones, Marion, Muscatine, Osceola, Ringgold, Scott, Tama, Washington and Wayne, one each.



DISTRIBUTION OF TYPING STATIONS AND PHARMACIST-DISTRIBUTORS IN IOWA

The accompanying spot map shows the distribution of 149 typing stations in Iowa and the location of 27 pharmacist-distributors who cooperate with the State Department of Health in supplying curative pneumococcic serum for the underprivileged patient whose type of pneumonia has been accurately determined. As indicated in the legend, the black circles and black triangles represent laboratory technicians and physicians respectively, who are associated with typing stations, who attended one of the pneumococcus study courses held recently or in December, 1938, and who report cases of pneumococcus pneumonia to the State Department of Health. The cross-in-circle and cross-in-triangle refer to laboratory technicians and physicians respectively, who are associated with typing stations that are equipped for pneumococcus typing and that report pneumonia cases to the State Department of Health. Clear circles and clear triangles represent hospital and other laboratories that have been supplied with diagnostic anti-pneumococcic serum and are equipped for typing, but have not in the past forwarded reports to the State Department of Health.

PREVALENCE OF DISEASE

	Oct. '39	Sept. '39	Oct. '38	Most Cases Reported From
Diphtheria	36	21	74	Black Hawk, Clinton
Scarlet Fever	253	96	205	Polk, Muscatine, Lucas
Typhoid Fever	12	13	17	Shelby, Linn
Smallpox	16	17	4	Muscatine, Polk
Measles	29	21	51	(For State)
Whooping Cough	60	51	61	Humboldt
Epidemic Meningitis	4	0	2	Henry, Keokuk, Marion, Polk
Chickenpox	152	13	81	Linn, Des Moines
Mumps	85	22	32	Des Moines, Fremont, Page
Poliomyelitis	60	35	6	Polk, Madison
Tuberculosis (Pulmonary)	61	43	120	(For State)
Undulant Fever	12	21	12	(For State)
Gonorrhea	210	135	163	(For State)
Syphilis	318	281	265	(For State)

The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

Lee Forrest Hill, Editor.....Des Moines
Dennis H. Kelly, Associate Editor.....Des Moines

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AMERICAN MEDICAL ASSOCIATION'S PLATFORM

According to an editorial in the November 25, 1939, issue of the *Journal of the American Medical Association,* the actions of the House of Delegates at its special Chicago session in September a year ago, and again at the meeting in St. Louis, have been translated by the Board of Trustees into a constructive platform for the American Medical Association. The eight point platform as announced at the Secretaries and Editors Conference held in Chicago on November 17 and 18 is as follows:

1. The establishment of an agency of federal government under which shall be coordinated and administered all medical and health functions of the federal government exclusive of those of the Army and Navy.
2. The allotment of such funds as the Congress may make available to any state in actual need for the prevention of disease, the promotion of health and the care of the sick on proof of such need.
3. The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.
4. The development of a mechanism for meeting the needs of expansion of preventive medical services with local determination of needs and local control of administration.
5. The extension of medical care for the indigent and the medically indigent with local determination of needs and local control of administration.
6. In the extension of medical services to all the people, the utmost utilization of qualified medical and hospital facilities already established.
7. The continued development of the private practice of medicine, subject to such changes as may be necessary to maintain the quality of medical services and to increase their availability.
8. Expansion of public health and medical services consistent with the American system of democracy.

The concepts advocated in this platform for the future development of health activities and medical care for the people of the United States will be found generally acceptable to the medical profession. The problem now is to find methods by which the provisions of this platform may be practically applied. No one seems to doubt that some sort of a national health bill will be introduced into the next session of Congress. Unless overshadowed by measures arising out of the war situation, such legislation is likely to be the major objective of the administration at Washington. It seems unlikely that the federal government, having embarked thus far, will cease its efforts at a National Health Program and bow in deference to this program of the American Medical Association.

There remain, then, two possible courses by which the principles enunciated in the platform may be made operative. One is by amending the present Wagner Bill, the provisions of which have aroused many objections, and which admittedly needs amending, and the other is by preparing a substitute bill which would have less threat of bureaucratic political domination and more achievement by democratic private enterprise. Just how much forthcoming legislation can be influenced in the direction of the principles laid down in the Association's platform, we do not know. Presumably strenuous efforts will be made along two lines, first, by educating the public with respect to the soundness of the platform in the hope that pressure from this source may be brought to bear on Congressmen; and second, by the usual method of lobbying. As the Journal views the situation at this time, the chief significance of the platform is that it may be used as a basis for bargaining with the lawmakers in Washington.

NATIONAL PHYSICIANS' COMMITTEE

Closely upon the heels of the announcement by the Board of Trustees of a platform for the American Medical Association comes another announcement, of the formation of a committee, apparently a voluntary committee, bearing the title of National Physicians' Committee for the Extension of Medical Service. Listed as Chairman

of the Executive Board is Dr. Edward H. Cary of Dallas; Dr. Austin Hayden of Chicago is Secretary; and Dr. N. S. Davis, III, of Chicago is Treasurer. Other members of the Board are as follows: Dr. Irvin Abell, Louisville; Dr. F. F. Borzell, Philadelphia; Dr. William F. Braasch, Rochester; Dr. John A. Hartwell, New York; Dr. Roger I. Lee, Boston; Dr. Alphonse McMahon, St. Louis; Dr. E. H. Skinner, Kansas City; and Dr. Charles B. Wright, Minneapolis. Mr. John M. Pratt has resigned his position with the National Committee to Uphold Constitutional Government to become Executive Administrator of the Board. Apparently some two hundred physicians throughout the United States have received invitations to form the Initial Central Committee. Funds to the extent of $250,000 are being solicited in order that the Committee may carry on its work.

The reasons for and the objective of the Committee are outlined in a small booklet entitled The Achilles Heel of American Medicine. According to information set forth in the pages of the booklet, American medicine, in spite of having attained world supremacy in the field of medicine and medical practice in its one hundred and fifty years of existence, stands today in danger of having its further development and its opportunity for service restricted and its independence forfeited. The "Achilles Heel" is to be found in the fact that American medicine concerned itself with the prevention, control, and the curing of disease so completely that it has failed to keep the public fully aware of its advances and of its superiority.

The booklet proceeds to point out that two new conditions have arisen to confront medicine. One is the result of the period of depression which has created an ever-increasing number of medically indigent people, and the other is the trend toward governmental paternalism which, unless checked, will lead, in the field of medicine, to regimentation of the medical profession and the practice of medicine under direct control of the government. The position is taken that political advantage would accrue through control of medicine, medical practice, and hospitalization by government, and that to secure this political advantage certain selfish political elements are campaigning to undermine the confidence of the public in the efficacy of American medicine and American physicians. Specifically cited is the anti-trust suit brought by the Department of Justice and the criminal indictment voted by the federal grand jury. The point is made that although the indictment was quashed, the harm has been done in the eyes of the people. The way was paved for the introduction of the Wagner National Health Bill. The public through newspapers, books, magazines, and the radio, hears that American medicine is inadequate and ineffective. It is being told that medical care and hospital service are unavailable in sparsely settled and inhospitable areas, and should be provided by government. It is being schooled in the belief that only government can provide medical care that will insure to each and every one the maximum efficiency in the treatment of disease.

Therefore it is imperative that American physicians must:

1. Make possible the providing of medical service to the indigent and those in the low income groups, and insure the most widespread distribution of the most effective methods and equipment in medicine and surgery.
2. Assume the responsibility of countering destructive propaganda by familiarizing the public with the facts in connection with the methods and the achievements of American Medicine.

To meet these needs the National Physicians' Committee for the Extension of Medical Service came into being. Initially it will advocate:

1. The maintenance of independent private medical practice.
2. The preservation and extension of our independent hospital system.
3. The centralization of all health services of federal and state governments.
4. The determination of health requirements on the basis of locally gathered and locally interpreted data and the utilizing of grants-in-aid only under conditions of locally demonstrated needs.
5. The control and disbursement of public health funds by administrators locally appointed or locally elected.

Finally, it is stated that the Committee will "to the fullest possible extent within the abilities and resources, familiarize the general public with its program and policies, private and public health needs,—the achievements of and the position occupied by American medicine,—the services rendered by physicians,— how and where these services are available, and will utilize to accomplish these purposes: the daily, weekly and trade papers, magazines, radio, public meetings, and the cooperation and services of other agencies or organized groups—which can aid effectively in promoting the objectives sought."

So much for the case of the Committee. What will be the reaction of the rank and file of the

hundred thousand odd members of the American Medical Association to a voluntary committee assuming the rôle of spokesmen for its membership? At the time a previous voluntary committee ventured to advance certain opinions about the medical situation, it was emphatically proclaimed that the only official voice of the American Medical Association was its House of Delegates. While we may agree with certain of the objectives of the Committee, nevertheless we are inclined to the belief that official designation of such a Committee by the House of Delegates would be a far more effective course to follow. Publicity attending another special session of the House of Delegates for such a purpose would in itself go far toward a realization of the objectives set forth in "Achilles Heel". Although this lack of official recognition is undoubtedly the most severe criticism that can be leveled against the National Physicians' Committee, we cannot escape the reflection that this is another case of locking the barn doors after the horses have been stolen. Less than a month remains before Congress convenes on January 3; certainly a short time in which to accomplish the purposes expressed by the Committee.

It is not our intention to question the motive of those physicians who have been instrumental in organizing this Committee. Their names stand too high on the honor roll of American medicine for that. We only question the methods advocated. We are firmly convinced that the front presented to the world by American medicine against the encroachment of political domination must be a united one, official and representative of majority opinion, plus an exhibition of real statesmanship on the congressional floors at Washington in the coming session of the legislature.

NEW EXPERIMENTAL WORK IN POLIOMYELITIS

Up to the present time the monkey has been the only experimental animal susceptible to the virus of poliomyelitis, and for this reason research in this disease has been exceedingly expensive. Recently, Charles Armstrong of the United States Public Health Service has announced the successful transmission of poliomyelitis to the eastern cotton rat.

A specific strain of poliomyelitis virus was obtained from a patient in Lansing, Michigan, and this virus has been successfully passed through fifteen monkeys. The eastern cotton rat was inoculated with a fourth monkey passage of the virus and the animal developed the clinical symptoms and pathologic lesions of poliomyelitis. Thus far this strain of virus has been carried in continuous series through nine cotton rat transfers. The brain and cord from the third and sixth rat passages conveyed typical symptoms and pathology of poliomyelitis when inoculated intracerebrally into monkeys. Successful transmission to date has been secured with the Lansing strain of virus only. Attempts to inoculate the rat with other strains of the virus have met with failure.

The discovery of a cheap, timid, prolific animal which is susceptible to the virus of this crippling disease will give great impetus to research. It is hoped that continued study will reveal knowledge which will permit control of a disease against which the art and the science of medicine are now impotent.

HOSPITAL FACILITIES

The Bureau of Medical Economics of the American Medical Association has collected certain factual medical data and published it in pamphlet form. In compliance with a request of the Bureau, the Journal is glad to make this information available to its readers. In this editorial the subject of hospital facilities of the United States is presented.

HOSPITALS AND HOSPITAL BEDS IN THE UNITED STATES*

	All Hospitals		Non-Governmental		Governmental	
	Hospitals	Beds	Hospitals	Beds	Hospitals	Beds
1927.....	6,807	853,318	4,998	308,149	1,809	545,169
1929.....	6,665	907,133	4,870	324,596	1,795	582,537
1931.....	6,613	974,115	4,797	332,591	1,816	641,524
1933.....	6,437	1,027,046	4,661	332,573	1,776	694,473
1935.....	6,246	1,075,139	4,522	333,427	1,724	741,712
1937.....	6,128	1,124,548	4,406	335,799	1,722	788,749
1938.....	6,166	1,161,380	4,438	346,244	1,728	815,136

*Annual Reports of the Council on Medical Education and Hospitals of the American Medical Association.

Reference to the accompanying table reveals several things. In the first place there has been a steady increase in the total number of hospital beds since 1927, even throughout the depression years. In considering any lack of hospital facilities in the future it is important to take into account this trend of hospital building. It will also be noted that while the total number of hospital beds has increased there has been a decline, until recently, in the number of hospitals. One possible explanation of this fact is that small hospitals have not been financially able to survive. One other item of interest may be noted in the table; the rate of increase in hospital beds has been much more rapid in governmental institutions than in privately operated concerns. One reason for this is to be found in the expansion of hospitals for nervous and mental diseases.

(Concluded on page 622)

The Christmas Seal Sale



Once again the holiday season approaches, and once again the familiar Christmas Seal makes it appearance. For thirty-three consecutive years this seal has been the symbol of hope and cheer at Christmas time. With the funds raised by the purchase of these penny stamps, tuberculosis associations throughout the country are able to maintain their life-saving programs.

When the National Tuberculosis Association was formed in 1904 for the study and prevention of tuberculosis, there were about six thousand beds for the care of tuberculous cases in the country; and there were approximately two hundred thousand deaths annually. Today there are one hundred thousand beds for the tuberculous, and less than seventy thousand deaths in 1938. Despite this increase in the number of beds, the total facilities are too low. At least two beds per each annual death are needed. During these years of concentrated effort, much has been accomplished. The death rate from tuberculosis has been reduced 75 per cent over the rate in 1904; yet tuberculosis still causes more deaths in persons between the ages of fifteen and forty-five years than any other disease! Another interesting fact is that tuberculosis takes the lives of 50 per cent more girls than boys between the ages of fifteen and twenty-five years. This excess of deaths has long been regarded as an enigma by the medical profession. In an exhaustive study made in New York and Detroit, every death during one year from tuberculosis among young women was carefully investigated, and several facts emerged from an analysis of the material obtained. School life, race, nativity, participation in industrial life, insufficient clothing, poor food habits, including the ever-present dieting fads, lack of sleep and too much recreation, seem negligible in their influence. The real hazards appear to be the psychic and physical changes attendant upon adolescence and maturity. Early marriage and childbearing increase the death rate from tuberculosis in this group.

During 1937 and 1938 more than 64,000 college students were given tuberculin tests, with 25.8 per cent showing positive reactions. Since 1932 and 1933, when the first figures were collected, there has been a steady increase in the number of tests and a slow but steady fall in the percentages of reactors. The Tuberculosis Committee of the American Student Health Association reports that "the value of the tuberculosis program to the individual student, whether he be the patient or the protected, is incalculable. The effort of finding tuberculosis is justified by the educational value alone. It is a demonstration of how lives can be saved and the community safeguarded. This is hygiene that actually operates".

It has been said that "the discovery of popular education as an instrument in preventive medicine, made by the pioneers in the tuberculosis movement, has proved almost as far-reaching in its results as the discovery of the germ theory of disease thirty years before". Scientific medicine has pointed the way to complete eradication of tuberculosis. An increasingly efficient public health service is cooperating with well-planned cooperative case-finding programs. There remain two important tasks if we are to attain the desired goal of a tuberculosis-free nation. One is the continued education of an intelligent public, and the other is the securing of sufficient funds to carry on the necessary health procedures. We have mentioned only a few of the activities in which component parts of the National Tuberculosis Association are engaged. Their number is legion and the sum necessary to maintain them at the height of their efficiency is no small item.

The physician is in an advantageous position to assist in both these phases. Certainly it is his duty to instruct his patients in the signs and symptoms and devastating consequences of tuberculosis, and it is his privilege to set an example for his wide circle of acquaintances by taking his share of Christmas seals.

At this time of the year our thoughts naturally turn to helping others, and nowhere will one find a better opportunity to express that desire in a practical manner than by purchasing Christmas seals. Let us in Iowa adopt the nationwide slogan "From now 'til Christmas, one on every letter".

Influenza*

James E. Kahler, M.D., Des Moines
Pathologist, Iowa Methodist Hospital

It is difficult to define the disease known as influenza because of the many changeable features which still characterize it. There is some doubt as to its etiology. Its clinical manifestations vary, particularly between pandemic and interpandemic cases. There is disagreement about the extent of the pathologic lesions which can be attributed to the disease itself. Much of this difficulty may be attributed to the absence of reliable criteria for diagnosing the disease and to the marked tendency to label a case "influenza" as the course of least resistance.

Etiology: Several organisms have been described as the cause of this disease. Principally among these have been Hemophilus influenzae, Bacterium pneumosintes, and a filterable virus. Many attempts have been made to transmit the disease to laboratory animals. As early as 1920, a disease, markedly similar to the disease in man, was produced by injecting Hemophilus influenzae into the noses and throats of monkeys. However, careful observers have not been able to recover this organism in several epidemics of human influenza. Soon after the great 1918-1919 pandemic, a disease was observed in swine which bore great similarity to human influenza. It has been definitely established that the etiology of swine influenza is complex; that is, due to two organisms, a filterable virus and a micro-organism known as Hemophilus influenzae suis, which is closely related to the human species of Hemophilus influenzae. Immunologic reactions indicate a close relationship between the human and swine viruses. This is so marked that some observers believe the swine virus identical to the 1918-1919 human virus. Both swine and human virus can be transmitted to ferrets and mice. Interestingly, the ferret reacts only with an upper respiratory infection to either virus, and the swine virus alone will infect the ferret, although in the hog itself this virus must be accompanied by Hemophilus influenzae suis before infection results. In mice, both viruses produce an extensive upper and lower respiratory infection.

Examination of pharyngeal washings, sputum or pulmonary exudate in human cases usually reveals the presence of the human virus unless the case has passed the fourth or fifth day; but the examination also always reveals the presence of additional pathogenic organisms: Streptococcus hemolyticus, pneumococcus, Streptococcus viridans, Hemophilus influenzae, Staphylococcus aureus, etc. One or more of these organisms may be isolated from the same case. There is a distinct tendency for the bacterial observations to vary widely in different localities and at different times in the same locality.

A definite conclusion cannot yet be drawn as to the relative rôles of bacterium and filterable virus in the production of this disease in man, but it is probable that the virus represents only a partial etiology, the human disease simulating that in the swine rather than that in the ferret or mouse.

Pathology: In man, the variability of the lesion produced is the result of the extent and virulence of the virus infection, combined with the type and virulence of the secondarily invading pyogenic organism. In general, in those cases uncomplicated by pulmonary infection, the lesion is restricted to an acute rhinitis and pharyngitis which does not differ microscopically from the inflammatory response in other infections. When pulmonary lesions occur, the involved lung is dark red and partially collapsed; there is little, if any, pleural exudate; section of the lungs reveals a purulent tracheitis, bronchitis and bronchiolitis. In more severe cases, the lung parenchyma is the seat of edema and hemorrhage, peribronchial infiltration and bronchopneumonia. In the fulminating cases, pneumonia with lobar distribution is commonly seen. The type and severity of the pulmonary lesion depends greatly upon the secondary invading organism. When the pneumococcus is present, the consolidation is likely to be lobar in type. Extreme hemorrhagic edema associated with marked pleural exudation is usually the result of an associated hemolytic streptococcic infection. Necrotizing bronchitis, bronchiolitis and alveolitis with formation of small abscesses occur as the result of the presence of Staphylococcus aureus. A diffuse purulent bronchitis with the expectoration of large amounts of purulent sputum is often due to the presence of the influenza bacillus. On the other hand, several authors have been unable to find a relationship between the type of bacteria present and the pulmonary lesion produced, but point out the similarity of the lung lesions to those initiated

*Editor's Note—This is the third in a series of editorials prepared upon our request. Previous articles appeared in the October and November issues.

by the inhalation of the poisonous gases plus a secondary invasion by various organisms.

In two human cases of influenza during the pandemic of 1918-1919, no organisms could be recovered from the lungs at autopsy. In these two cases, presumably produced solely by virus, Goodpasture observed a gross and microscopic appearance similar to that commonly observed at that time. In laboratory animals in which a pure virus pulmonary lesion can be produced, the lungs are enlarged, very heavy, but rather limp and friable. The pleural surfaces are smooth and glistening, but deep reddish-blue in color. On section, the trachea and bronchi are filled with bloody froth. Microscopically, there is a marked interstitial pneumonia with thickening, and proliferation of the alveolar walls. The alveolar lumina are filled with edema fluid and only a scant exudate composed predominately of mononuclears is present.

Influenza, at the present time may, therefore, be considered as a disease in which a filterable virus, the strains of which differ in virulence, produces a descending respiratory infection which in its most severe form includes bronchiolitis and interstitial pneumonia. Even in the most severe form, the virus disease is rarely fatal. However, the virus infection prepares the lung for secondary invasion by one or more of a variety of pathogenic organisms which considerably alter the extent and character of the consolidation, and may radically alter the prognosis.

HOSPITAL FACILITIES

(Continued from page 619)

If one considers the question of bed occupancy in the United States, interesting findings come to light. In 1938 only about 69 per cent of the general hospital beds available were occupied. During this year there was an average daily census of 132,454 empty beds in the general institutions. Furthermore, a study of distribution shows that less than 3,000,000 persons throughout the United States are further than thirty miles from a hospital registered by the American Medical Association. Not included as yet in the list of registered hospitals are more than 2,000 small institutions giving nursing medical services. The question may well be asked, is it better to build new hospitals or to fill present empty beds?

The situation in regard to the percentage of bed occupancy in the nervous and mental disease hospitals is vastly different. Figures for 1938 show that while the number of beds for these diseases exceed the bed facilities in general hospitals by 160,000, nevertheless the bed occupancy for the former was 95 per cent as compared with 69 per cent for the latter. Admittedly the conditions exisiting here need correcting. One solution is indicated by improvements in methods of treatment which are taking place and which may make a more rapid turnover of patients possible.

In summing up the factual data regarding hospital facilities in the United States as herein presented, one may say there is evidence to support the contention that, except for certain isolated areas where local need exists, the number of general hospital beds now available, together with those additional beds which will become available in the normal expansion program, are sufficient if means for more complete utilization are provided. A definite shortage exists in beds for mental and nervous diseases.

SPEAKERS BUREAU ACTIVITIES

LUTHER COLLEGE LECTURE SERIES

Three lectures remain on the series of hygiene talks which is being sponsored by the Luther College Student Health Service in Decorah, and conducted by the Speakers Bureau. They are as follows:

Dec. 14 Cancer
James V. Prouty, M.D., Cedar Rapids

Jan. 4 Hygiene of the Skeletal and Muscular Systems
Leo H. LeDage, M.D., Davenport

Jan. 11 Endocrines
J. Stuart McQuiston, M.D., Cedar Rapids

The meetings will be held in the main auditorium of the college from one to two p. m.

RADIO SCHEDULE

WOI—Wednesdays at 3:45 p. m.
WSUI—Tuesdays at 4:00 p. m.

Dec. 12 Tuberculosis and Time
Fred Sternagel, M.D.

Dec. 19 Organizing for Health
Alonzo L. Jenks, M.D.

Dec. 26 Medicine in Retrospect During 1939
John W. Caldwell, M.D.

Jan. 2 Pneumonia
Draper L. Long, M.D.

Jan. 9 Prenatal Care
Addison W. Brown, M.D.

The Speakers Bureau wishes to announce that it will welcome the names of any members who desire to cooperate with us in preparing radio talks for our regular weekly programs. Volunteers who wish to participate in this activity are urged to communicate with this office at any time.

WOMAN'S AUXILIARY NEWS

Mrs. Fred Moore, *Chairman of Press and Publicity Committee*
3407 Lincoln Place Drive, Des Moines

President—Mrs. Edward A. Hanske, Bellevue
President Elect—Mrs. Elbert T. Warren, Stuart
Secretary—Mrs. Walter J. Connell, Dubuque
Treasurer—Mrs. Jay C. Decker, 722 Thirty-sixth Street, Sioux City

PUBLIC RELATIONS PROGRAM

The first object of the Woman's Auxiliary is "through its members, to extend the aims of the medical profession to all organizations which look to the advancement of health education." It is, therefore, the duty of the Department of Public Relations to promote at all times this first object of the Auxiliary and to urge each member to cooperate in carrying forward a well formulated Public Relations program which should include first, acquainting the public with the means of acquiring authentic information on health; and second, presenting the attitude and aims of the medical profession on national health issues.

First and foremost, any public relations program should be so planned as to:

1. Create good will for an institution.
2. Build a public opinion toward that institution which is correctly informed as to aims.
3. Produce confidence in the integrity and ability of that institution to fulfill its obligations to the community in which it functions.

In directing a public relations program, certain rules of conduct should be constantly observed. We must be tolerant and fair, rational and honest, and above all, tactful. A proper degree of aggressiveness is essential for the success of any program, but an unfair, irrational and unduly aggressive attitude can destroy the best planned program. Our duty, then, is to find that desirable mean, and adhere to it at all times.

County chairmen of public relations committees have one of the most important, if not the most important, position in the entire organization. During these times of confusion and misunderstanding, due for the most part to dissemination of mis-information on medical problems, the public relations function of the Auxiliary becomes of paramount importance. We should and must seek by proper means to help bring about sympathetic understanding between members of the medical profession and the public which is the recipient of medical services. County chairmen should study recommendations and literature from the national and state chairmen, and consult the county president and advisory council before attempting any project advised in such recommendations. Suggested health projects are as follows:

1. Health essay contests in high schools.

2. Creating interest and utilizing programs of national and local radio broadcasts on health.

3. Library advisory work. Some counties have local library committees, who act in an advisory capacity to librarians of public libraries. Lists of books pertaining to scientific medicine and medical care for the layman, approved by the American Medical Association, are presented for the consideration of the book selection committee of the library.

4. Enlarging the services of the Speakers Bureau of the Iowa State Medical Society, in their efforts to furnish interesting worthwhile speakers for lay meetings.

5. Disseminating literature on health education and medical economics.

6. Summer Round-Up. County advisors should be consulted as to plans for cooperation with the Parent-Teachers Association on this project, and the committee should be guided by these plans.

7. Clipping file of newspaper and magazine articles on all questions pertaining to health and medicine. This file should be maintained for the use of the Auxiliary.

8. Planning public relations teas. Plans and suggestions may be secured from the chairman, Mrs. Seidler, Jamaica.

9. Reviewing current books and magazine articles dealing with the medical profession. These reviews should be presented several times a year to the Auxiliary.

10. Promoting *Hygeia*, The Health Magazine.

Every county chairman should have a copy of the handbook, should subscribe to *Hygeia* and the National News Letters, and read the Auxiliary News Sections in the *Journal of the American Medical Association* and in the Journal of the Iowa State Medical Society.

Mrs. W. A. Seidler, Chairman,
Public Relations Committee.

SOCIETY PROCEEDINGS

Benton County

Newly elected officers of the Benton County Medical Society include the following: Dr. Nathan B. Williams of Belle Plaine, president; Dr. George W. Yavorsky of Belle Plaine, vice president; and Dr. Dean A. Dutton of Van Horne, secretary and treasurer.

G. R. Woodhouse, M.D., Secretary

Black Hawk County

Frank R. Peterson, M.D., professor of surgery, State University of Iowa, College of Medicine, Iowa City, was guest speaker for the Black Hawk County Medical Society, at a meeting held in Waterloo, Tuesday, November 21. He discussed Reasons for Failure in Gallbladder Surgery.

Decatur County

Two physicians from Des Moines presented the scientific program when members of the Decatur County Medical Society met in regular session in Leon, Tuesday, November 21. Wendell M. Willett, M.D., read a paper on Diseases of the Skin, and Van C. Robinson, M. D., spoke on Hypertension.

Dubuque County

The regular monthly meeting of the Dubuque County Medical Society was held Tuesday, November 14, at the Julien Dubuque Hotel in Dubuque. The meeting was well attended. E. D. Plass, M.D., of Iowa City, addressed the members on the subject of Leukorrhea. Dr. Biehn of the Abbott Laboratories spoke on The Use of Nembutal in Obstetrics, and his remarks were formally discussed by Dr. Plass.

J. J. Mueller, M.D., Secretary

Hardin County

The annual election of officers was the order of business at the Hardin County Medical Society meeting held in Eldora, Tuesday, November 21. Results are as follows: Dr. Eugene J. Knopf of Hubbard, president; Dr. Kenneth H. Weaver of Union, vice president; and Dr. William E. Marsh of Eldora, secretary.

Iowa County

The Iowa County Medical Society met for a six-thirty dinner and scientific program, Tuesday, November 7, at the Doose Hotel in Marengo. Harry R. Jenkinson, M.D., of Iowa City, was the speaker of the evening, discussing Malaria. Officers elected at the business session include: Dr. Alexander C. McKean of Ladora, president; Dr. Donald F. Miller of Williamsburg, vice president; and Dr. Irvin J. Sinn of Williamsburg, secretary and treasurer.

Johnson County

The Board of Control of State Institutions and Dr. John H. Peck, director of the Oakdale Sanatorium were hosts to the Johnson County Medical Society for its meeting Wednesday, November 1. After the six-thirty dinner and short business session, Henry C. Sweany, M.D., director of research, Chicago Municipal Sanitarium, spoke on The Sequelae of Pulmonary Tuberculosis.

R. J. Prentiss, M.D., Secretary

Madison County

Members of the Madison County Medical Society met at the Winterset Hospital for their regular monthly meeting on Monday, November 20. Auxiliary members were guests at the six-thirty dinner, after which Addison W. Brown, M.D., of Des Moines, spoke on Causes of Vaginal Bleeding. Officers elected to serve the organization during 1940 are: Dr. John F. Veltman of Winterset, president; Dr. Glenn J. Anderson of Winterset, vice president; Dr. Evelyn M. Olson of Winterset, secretary and treasurer; Dr. Ivan K. Sayre of St. Charles, delegate; and Dr. Herbert N. Boden of Truro, alternate delegate.

Evelyn M. Olson, M.D., Secretary

Page County

A lecture and moving picture on the Management of Pneumonia with special reference to treatment with the new drug, sulfapyridine, was presented before the Page County Medical Society, at the Hand Hospital in Shenandoah, Friday, November 10. F. E. Schmidt, M.D., of Chicago, was the lecturer with the film, which was given under the auspices of the Iowa State Department of Health.

Polk County

The next meeting of the Des Moines Academy of Medicine and Polk County Medical Society will be held at the Hotel Fort Des Moines, Wednesday, December 13. Harold C. Black, M.D., of Des Moines, will give a report of the recent study by the American Medical Association on the Need and Supply of Medical Care in Polk County. The scientific portion of the program will consist of an address by Sumner L. Koch, M.D., of Chicago, on Principles in the Treatment of Open Wounds.

Scott County

The annual election of officers for the Scott County Medical Society was held, Tuesday, November 7, at the Lend-A-Hand Club in Davenport. Results are as

follows: Dr. Charles E. Block, president; Dr. Howard A. Weis, vice president; Dr. Preston E. Gibson, secretary; Dr. Thomas W. McMeans, treasurer; Dr. William C. Goenne, delegate; and Dr. Raymond E. Peck, alternate delegate. All officers are of Davenport. After the business session, R. M. Sorensen, M.D., head of the venereal disease control bureau of the State Department of Health, Des Moines, spoke on Newer Aspects in the Treatment of Syphilis.

Tama County

A moving picture film on fractures was shown and discussed by Albert J. Wentzien, M.D., of Tama, at a meeting of the Tama County Medical Society held in Traer, Thursday, November 23. The session followed a six-thirty dinner.

Wapello County

Members of the Sunnyslope Sanatorium staff were hosts at the annual joint meeting to the Wapello County Medical Society and physicians in the nine counties of the Ninth Councilor District. Dr. Harry W. Vinson of Ottumwa, presided during the dinner and evening program, and introduced the guest speaker, Charles K. McCarthy, M.D., of Des Moines, director of the cooperative tuberculosis control service of the State Department of Health.

Washington County

The Washington County Medical Society held its regular monthly meeting Tuesday, November 28. Following a six-thirty dinner, John W. Dulin, M.D., of the State University of Iowa, College of Medicine, gave an interesting talk on Malignancies of the Large Bowel. The address was illustrated by lantern slides.

W. S. Kyle, M.D., Secretary

Wayne County

Everett M. George, M.D., of Des Moines, furnished the scientific program for the Wayne County Medical Society meeting in Corydon, Tuesday, November 14. Dr. George presented a lecture, illustrated by moving pictures, on Fractures and Their Treatment.

Woodbury County

The regular meeting of the Woodbury County Medical Society was held Friday, November 17, at the Martin Hotel in Sioux City. Cornelius G. Dyke, M.D., associate professor of radiology, Columbia University College of Physicians and Surgeons, New York, was the speaker of the evening, discussing Roentgenologic Diagnosis of Intracranial Lesions.

W. H. Gibbon, M.D., Secretary

Iowa Academy of Ophthalmology and Otolaryngology

The Iowa Academy of Ophthalmology and Otolaryngology met at the State University of Iowa, College of Medicine, in Iowa City, Friday, November 10. The following program was presented during the afternoon: The External Ethmo-sphenoid Operation, Dean M. Lierle, M.D.; The Treatment of Malar Fractures, R. A. Fenton, D.D.S.; Surgical Anatomy of the Parapharyngeal Space, E. W. Scheldrup, M. D.; Ludwig's Angina, Ralph C. Carpenter, M.D.; Demonstration of Test for Malingering, Scott Reger, Ph.D.; Orbital Complications Secondary to Sinus Infections in Children, L. B. Evers, M.D.; and Treatment for Ankylosis of Temporomandibular Joint, W. C. Boden, M.D. Case demonstrations were given as follows: Hemangioma of Petrous Bone, N. L. Francis, M.D.; Blastomycosis of Hard Palate, W. R. Johnston, M.D.; and Nasopharyngeal Fibroma and Plasmocytoma, A. C. Johnson, M.D.

The session closed with a buffet supper, served at the home of Dr. and Mrs. D. M. Lierle.

Iowa and Illinois Central District Medical Association

The quarterly winter meeting of the Iowa and Illinois Central District Medical Association will be held at the Blackhawk Hotel in Davenport, Thursday, December 14. Dinner will be served at six-thirty, after which Walter J. Balzer, M.D., of Davenport will read a paper on Acute Hydramnions and Postpartum Hemorrhage; A Case Report. The address of the evening will be given by Percy H. Swahlen, M.D., professor of obstetrics and gynecology, St. Louis University School of Medicine. Dr. Swahlen will be introduced by Dr. H. A. Meyers of Davenport, and will speak on Important Points in Obstetrics Confronting the General Practitioner. Discussion on his paper will be opened by Dr. E. N. Nash of Galesburg, Illinois, Dr. Phebe Pearsall-Block of Moline, Illinois, and Dr. H. A. Weis of Davenport.

James Dunn, M.D., Secretary

PERSONAL MENTION

Dr. P. C. Jeans, head of the department of pediatrics, State University of Iowa, College of Medicine, addressed members of the American Academy of Pediatrics, at their annual meeting in Cincinnati, Ohio, Thursday, November 16. He spoke on "Vitamin and Mineral Deficiencies".

Dr. M. E. Freeland, who was graduated in 1938 from the University of Minnesota Medical School, has arrived in Callender, where he will take over the practice of the late Dr. I. J. Weiss. Dr. Freeland interned at Trinity Hospital in Minot, North Dakota, and has been engaged in public health work at Leavenworth, Kansas.

Dr. Thomas F. Desmond, seventy-four years of age, who has practiced his profession in Webster City for the past forty years, has recently announced his retirement from active work.

Dr. Earl E. Gilfillan, after several years' practice in Pulaski, has announced his removal to Memphis, Missouri, effective December 1. Another member of the family, Dr. Clarence N. Gilfillan, is returning from San Francisco to Eldon, to enter the practice of medicine. Dr. Gilfillan practiced for two years in

Fremont, and since then has spent two years in special surgical postgraduate work at the Letterman General Hospital in San Francisco. Both physicians are sons of Dr. Homer J. Gilfillan of Cantril.

Dr. William F. Mengert, associate professor of obstetrics and gynecology, State University of Iowa, College of Medicine, was elected secretary and treasurer of the Central Association of Obstetricians and Gynecologists at the annual convention of that organization held in Kansas City, Missouri, Friday, November 3.

MARRIAGES

Miss Mildred Greaves of Sherman Mills, Maine, and Dr. Roderick F. MacDougal, formerly of Dover Foxcroft, Maine, were married Saturday, November 4, at the parsonage of the Westminster Presbyterian Church in Cedar Rapids. Dr. MacDougal was graduated in 1935 from the Yale University School of Medicine, New Haven, and spent some time at the State University of Iowa, College of Medicine. The young couple will make their home in Cedar Rapids, where Dr. MacDougal has just recently entered the private practice of medicine.

DEATH NOTICES

Barfoot, Albert Fremont, of Decorah, aged seventy-seven, died November 20, as the result of a paralytic stroke which he suffered two months ago. He was graduated in 1886 from the State University of Iowa, College of Medicine, and at the time of his death was a life member of the Winneshiek County and Iowa State Medical Societies.

Beauchamp, Joseph W., of Bedford, aged eighty-eight, died November 23 of a skull fracture received in a fall. He was graduated in 1876 from the College of Physicians and Surgeons, Keokuk, and at the time of his death was a life member of the Taylor County and Iowa State Medical Societies.

Brown, William Ebenezer, of Cedar Rapids, aged fifty-nine, died November 21, following a heart attack. He was graduated in 1911 from the Bennett College of Eclectic Medicine and Surgery, Chicago, and at the time of his death was a member of the Linn County Medical Society.

Decker, George Edward, of Davenport, aged sixty-six, died November 3, after an extended illness. He was graduated in 1897 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Scott County Medical Society.

Keefe, Frank Miles, of Clinton, aged sixty, died November 9 as the result of an inoperable brain tumor. He was graduated in 1904 from the University of Illinois, College of Medicine, Chicago, and at the time of his death was a member of the Clinton County Medical Society.

MINUTES OF MEETINGS OF STATE SOCIETY OFFICERS AND COMMITTEES

Council Meeting
Wednesday, November 8, 1939

The Council of the Iowa State Medical Society met Wednesday, November 8, 1939, at the Hotel Fort Des Moines in Des Moines with all councilors present. Also present were the president, F. A. Hennessy of Calmar, the president-elect, F. P. McNamara of Dubuque, the secretary, Robert L. Parker of Des Moines, R. M. Sorensen of the State Department of Health, and J. C. Painter of Dubuque.

Dr. Sorensen explained the difficulties encountered in the distribution of antisyphilitic drugs, and the Council approved a plan whereby the State Department of Health will purchase the drugs direct from manufacturers on a contract, and distribute them to the physicians directly.

Dr. Painter then presented a request from the American College of Chest Physicians for the state society to appoint a tuberculosis committee which would in turn appoint a tuberculosis committee in each county to guide organized medicine in the discovering and treating of cases of tuberculosis. A committee was appointed to investigate the matter and report to the Council at its next meeting.

Dr. Parker explained the new method of handling enforcement of the Harrison Narcotic Law, and was instructed to send each member of the society a letter setting forth the facts.

Meeting of the Board of Trustees
Wednesday, November 15, 1939

The Board of Trustees of the Iowa State Medical Society met in the central office Wednesday, November 15, 1939, at 9:30 a. m. with the three trustees and the secretary present.

1. Bills were authorized. 2. The contract for printing the JOURNAL was discussed but tabled until the bids were made comparable in all details. 3. Dr. Shaw was authorized to attend the secretaries' conference in Chicago on November 17 and 18. 4. Dr. B. B. Parker of Centerville was appointed to fill the vacancy on the Medical Economics Committee created by the death of Dr. Moerke. 5. Purchase of a steel desk for the office was authorized, as well as that of one new typewriter as replacement each year. 6. The secretary was instructed to write all physicians whose notes for state dues are still unpaid. 7. The annual audit of the books was authorized. 8. The trustees examined bonds at the bank.

NOTICE TO PHYSICIANS DESIRING LOCATION

The central office has received requests from several communities for resident physicians. Any doctor who is looking for a location is asked to write the secretary, Dr. Robert L. Parker, for suggestions.

History of Medicine in Iowa

Edited by the Historical Committee

Dr. Frank M. Fuller, Keokuk
Dr. John T. McClintock, Iowa City
Dr. R. T. Lenaghan, Clinton
Dr. Tom B. Throckmorton, Des Moines
Dr. Walter L. Bierring, Des Moines
Dr. William Jepson, Sioux City

TESTIMONIAL DINNER
FOR
James Frederic Clarke, A.M., M.D., F.A.C.S.

On Tuesday evening, November 7, 1939, a testimonial dinner was tender Dr. and Mrs. James Frederic Clarke of Fairfield in commemoration of the doctor's completion of fifty years of medical practice in one Iowa community. Nearly one hundred medical and other friends gathered at the McElhinny House in Fairfield to add their tribute on this happy and unique occasion.

Born in Iowa, educated in Fairfield schools and Parsons College, Dr. Clarke came under the influence of that quartette of famous scientists at the State University, Professors Macbride, Calvin, Nutting, and Andrews, receiving the degree of Master of Arts in 1889. He was equally fortunate in his choice of the University of Pennsylvania for undergraduate training in medicine when its medical faculty included some of the most distinguished leaders in American medicine, as well as the Canadian physician, Dr. William Osler, who was then already recognized as a great clinical teacher. After his graduation in 1889, Dr. Clarke was again fortunate in receiving an interne appointment for two years' service at Old Blockley—now the Philadelphia General Hospital—then as now one of the largest charity hospitals in the United States. It was here Dr. Osler carried on his clinical teaching with autopsy examinations, the records of which are among the treasured traditions of this old hospital. After completing his interneship, Dr. Clarke devoted a year to postgraduate studies at the new Johns Hopkins Hospital in Baltimore under the Big Four of early Johns Hopkins—Welch, Halstead, Kelly, and Osler. He then returned to Fairfield, where he entered the practice of medicine. He married Miss Melinda E. Clapp, of Fairfield.

Dr. Clarke's contributions to scientific medicine in Iowa were a natural sequence of a background of thorough cultural and professional training. His publications on infantile myxoedema in 1904 and sporadic cretinism in 1906, based on the observations of nine cases, were among the first reports outside of the larger medical centers of the east. The first operation for acute appendicitis in Jefferson county was performed by Dr. Clarke. Recognition came to him from medical societies in his election as vice president of the Iowa State Medical Society, and president of the Southeastern Iowa and Des Moines Valley Medical Associations. He also served as visiting lecturer on hygiene at the College of Medicine, State University of Iowa, for a period of three years. His civic services include terms as mayor of Fairfield and as a member of the House, State Legislative Assembly, 1906-7. Dr. Clarke took a prominent part in the organization of the Jefferson County Hospital and its affiliated training school for nurses. His medico-military service has likewise been outstanding. His experiences as Major-Surgeon of the 49th Iowa Volunteer Infantry Regiment in the Spanish-American War are vividly described in his interesting history of the Regiment published in the November, 1901, issue of the Iowa Medical Journal. Soon after the entry of this country in the World War, Dr. Clarke organized Unit R, was appointed Lieutenant Colonel in the United States Army, and joined the American expeditionary forces. Following the Armistice he was placed in command at Red Cross Hospital No. 5 in Paris.

The banquet table was beautifully decorated in conformity with the golden anniversary. Dr. H. E. Graber, vice president of the Jefferson County Medical Society, presided most graciously as toastmaster. In response to toasts, Dr. Walter L. Bierring spoke on behalf of Iowa medicine, Dr. Felix A. Hennessy as president brought greetings from the Iowa State Medical Society; Dr. Frank M. Fuller of Keokuk spoke for the medical colleagues of southeastern Iowa; and Dr. L. D. James expressed the affectionate greetings of the local profession. The occasion was honored by the presence of Dr. and Mrs. S. A. Spilman of Ottumwa. Dr. John T. McClintock represented the medical faculty of the State University and Professor Charles Carter the faculty of Parsons College. Two councilors of the Iowa State Medi-

cal Society were present, Dr. C. A. Boice of Washington and Dr. H. A. Spilman of Ottumwa.

The response of Dr. Clarke to the many tributes was characteristic of the equanimity and philosophy that has guided this true physician throughout the years. There was unanimous accord that the humorous remarks of Mrs. Clarke were a fitting finale to a memorable anniversary occasion. Throughout the early period of medical and surgical practice when she acted as principal assistant, and in companionship through fair and stormy weather, she had noted but one blind spot in the doctor's thinking. This was his constant adherence to Republican principles, which, according to her Democratic upbringing, was entirely contrary to his usual well-balanced judgment.

W. L. B.

OBITUARIES

OSCAR HENRY PLANT, M.D.
1875-1939

On October 1, 1939, Dr. Oscar Henry Plant, professor and head of the department of pharmacology in the College of Medicine, State University of Iowa, died unexpectedly of coronary sclerosis. Dr. Plant, in apparent good health and at the height of his career, had just reached the age of sixty-four years. It is with deep sorrow that we face the loss of this great teacher, scientist and friend.

Dr. Plant was born at Lawrence, Kansas, on September 30, 1875. He received his early education in the public schools at Topeka, Kansas, and Galveston, Texas. In Galveston he assisted a local pharmacist during his spare hours and vacations. This experience, no doubt, had an important bearing on his decision to enter medical school, and was a major factor in directing his interest to pharmacology, a field to which he contributed so much in later years.

Dr. Plant attended the University of Texas Medical School, and received his doctor of medicine degree in 1902. During his senior year in medicine he was appointed instructor in the department of physiology under Dr. W. S. Carter. He continued in this position for five years after graduation, during which period he also carried on an active medical practice in Galveston. In 1907 the part-time staff appointments of the preclinical departments of the medical school were eliminated, and Dr. Plant was forced to choose between private practice and teaching. He decided to continue his work in the medical school with Dr. Carter, and he was promoted at once to an assistant professorship in physiology.

In 1911 Dr. Plant joined the staff of the University of Pennsylvania as instructor in pharmacology. In 1914 he was advanced to the rank of assistant professor and in 1918 to professor. During this period he was associated with Dr. A. N. Richards in the well-known research on kidney function carried out by Dr. Richards and his colleagues.

Dr. Plant came to the University of Iowa nineteen years ago as professor and head of the department of pharmacology, a position which he held until his death. On assuming this new position, he set about to organize what became in a very short time one of the outstanding teaching and research laboratories of the country. His laboratory course in pharmacology was a model of thoughtful planning. The experiments, no matter how difficult technically, always worked out to the minutest detail, and students and associates alike never ceased to admire his ingenuity. From this example, innumerable students took an active interest in the detailed procedures so essential to successful studies in experimental medicine. In the field of research he developed an extensive program for the study of the action of morphine. Together with his staff, Dr. Plant made many notable and fundamental contributions in this field. Of these the best known are those dealing with morphine addiction and the action of morphine on the alimentary tract. A few years after Dr. Plant came to the University of Iowa, funds were made available for the new medical buildings on the west side of the campus. Dr. Plant was made chairman of the Building Committee of the Faculty, a position in which he demonstrated the resourcefulness in planning and the attention to important details which were so remarkable in his teaching and research activities. The present buildings and equipment of the College of Medi-



OSCAR HENRY PLANT, M.D.

cine will stand as a permanent memorial to him and to those who assisted him in this work.

Dr. Plant was a member of the Johnson County Medical Society, The Society for Experimental Biology and Medicine, The American Association for Advancement of Science, The American Physiological Society, and the American Society for Pharmacology and Experimental Therapeutics. He was treasurer of the latter society from 1929 to 1934, vice president from 1935 to 1936, and at the time of his death was president of this organization. He was also chairman of the executive committee of the Federation of American Societies for Experimental Biology, and as such he would have presided over their annual meeting in New Orleans in March, 1940. The presidency of the pharmacological society and the chairmanship of the Federation are the highest tokens of respect given to pharmacologists in America and are the best proof of the high esteem in which Dr. Plant was held by his colleagues.

In 1904 Dr. Plant was married to Ella Mary Beissner of Galveston, Texas. She and their son William are the only direct relatives to survive him. Although he had only one son of his own, he often said that there were former students all over the United States who were like sons to him.

The passing of Dr. Plant is a very great loss to the University and to medical science. His colleagues will remember him not only for his outstanding achievements as a scientist and teacher but also for his wholehearted friendship and sympathetic counsel.

E. M. MacEwen, M.D.

GEORGE EDWARD DECKER, M.D.
1873-1939

In the death of Dr. George Edward Decker of Davenport in a Cincinnati Hospital on November 3, 1939, one of the keenest medical minds of this generation of Iowa physicians was stilled forever.

As a student in the biologic sciences at the State University of Iowa, he early showed that critical investigative spirit which characterized his entire medical career. A favorite pupil of Dr. C. C. Nutting, professor of zoology, Dr. Decker was invited as assistant to accompany several summer expeditions to the Bahama Islands. These qualities led to his election to Sigma Xi, honorary science society. After his graduation from the Liberal Arts College in 1895, he entered the College of Medicine with advanced standing, and received the degree of doctor of medicine in 1897. He was particularly interested in the fundamental sciences of bacteriology, pathology, and physiological chemistry, only recently established at that time in the medical school. His special training was toward the field of surgery, and he was fortunate in the sponsorship of such distinguished leaders as Dr. William D. Middleton and Dr. Laurence W. Littig, as well as two brilliant surgeons of that period, Dr. William L. Allen and Dr. Richard W. Hill. After establishing a successful practice in Davenport, the city of his birth, Dr. Decker's interests were diverted for a number of years as



GEORGE EDWARD DECKER, M.D.

medical director and president of the Register Life Insurance Company of Davenport. Later when this company became affiliated with an insurance company in another state, Dr. Decker again resumed his practice in Davenport.

His active interest in civic affairs of his community is indicated by membership on the board of education and in the Academy of Sciences. He also served as president of the Davenport Public Museum. From 1907 to 1911 he was a member of the Iowa State Board of Health and Medical Examiners. For a number of years he was appointed visiting lecturer at the State University College of Medicine with special reference to the surgical diseases of children.

His high regard for his friend, Dr. Martin H. Fischer, the distinguished physiologist at the University of Cincinnati, probably accounts for his wish to be under his observation during his last illness. His death was attributed to hypertension and resulting complications. He is survived by his widow, two daughters, four grandchildren, his mother, and one son, Dr. George Edward Decker, Jr., now serving an interneship at the Montreal General Hospital, Montreal, Canada.

Through the medium of the Journal, sincere expression of sympathy is tendered in their bereavement. The many friends of Dr. Decker will long remember his genial personality, the brilliant mind, and the charm of his fellowship. W. L. B.

THE JOURNAL BOOK SHELF

BOOKS RECEIVED

PRINCIPLES AND PRACTICE OF OPHTHALMIC SURGERY—By Edmund B. Spaeth, M.D., associate professor of ophthalmology in the Graduate School of Medicine, University of Pennsylvania. Lea and Febiger, Philadelphia, 1939. Price, $10.00.

THE VAGINAL DIAPHRAGM—By Le Mon Clark, M.D., Chicago. Illustrated. The C. V. Mosby Company, St. Louis, 1939. Price, $2.00.

WHAT IT MEANS TO BE A DOCTOR—By Dwight Anderson. Published by the Public Relations Bureau, Medical Society of the State of New York, 2 East 103rd Street, New York, N. Y., 1939. Price, $1.00.

MENSTRUAL DISORDERS. PATHOLOGY, DIAGNOSIS AND TREATMENT—By C. Frederic Fluhmann, M.D., associate professor of obstetrics and gynecology, Stanford University School of Medicine, San Francisco, California. W. B. Saunders Company, Philadelphia and London, 1939. Price, $5.00.

THE GENUINE WORKS OF HIPPOCRATES—Translated from the Greek by Francis Adams, LL.D., Surgeon. The Williams and Wilkins Company, Baltimore, Maryland, 1939. Price, $3.00.

A TEXTBOOK OF CLINICAL NEUROLOGY—By Israel S. Wechsler, M.D., professor of clinical neurology, Columbia University, New York. Fourth edition, revised. W. B. Saunders Company, Philadelphia and London, 1939. Price, $7.00.

CLINICAL PATHOLOGICAL GYNECOLOGY—By J. Thornwell Witherspoon, M.D., formerly associate professor of experimental and pathological gynecology, Indiana University Medical Center. Lea and Febiger, Philadelphia, 1939. Price, $6.50.

HEALTH OFFICERS' MANUAL—By J. C. Geiger, M.D., Dr. P.H., director of the Department of Public Health, City and County of San Francisco, California. W. B. Saunders Company, Philadelphia and London, 1939. Price, $1.50.

ANESTHESIA: NARCOSIS, LOCAL, REGIONAL AND SPINAL—By A. M. Dogliotti, M.D., professor of surgery, University of Modena. Translated by Carlo S. Scuderi, M.D., associate in surgery, University of Illinois, College of Medicine. S. B. Debour, Publishers, Chicago, 1939. Price, $7.50.

NITROUS OXIDE-OXYGEN ANESTHESIA—By F. W. Clement, M.D., director of anesthesia at Flower Hospital, Toledo, Ohio. Lea and Febiger, Philadelphia, 1939. Price, $4.00.

INJURIES OF THE NERVOUS SYSTEM—By Otto Marburg, M.D., clinical professor of neurology; and Max Helfand, M.D., assistant clinical professor of neurology and psychiatry, Columbia University. Veritas Press, New York, 1939. Price, $3.00.

EYE, EAR, NOSE AND THROAT MANUAL FOR NURSES—By Roy H. Parkinson, M.D., St. Joseph's Hospital, San Francisco. Fourth edition. The C. V. Mosby Company, St. Louis, 1939. Price, $2.25.

BOOK REVIEWS

CLINICAL DIAGNOSIS BY LABORATORY METHODS

By James Campbell Todd, M.D., late professor of clinical pathology, University of Colorado; and Arthur Hawley Stanford, M.D., professor of clinical pathology, University of Minnesota (The Mayo Foundation). Ninth edition, revised. W. B. Saunders Company, Philadelphia and London, 1939. Price, $6.00.

This book holds a position which few other works attain, in that it continues to supply, within its field, the requirements of medical men, whether they be medical students, general practitioners or specialists. The manner in which each subject is covered and in which each test is described gives the novice a clear insight into the method of analysis, and permits the more experienced individual to perform accurately the procedures and to interpret exactly the findings. In each object of study the reader is told what to look for, how to look for it, and the significance of the results of each test.

Complete details are given for the proper examination of sputum, urine, blood, gastric and duodenal contents, feces, pus and puncture fluids, for clinical chemistry tests, for the preparation of vaccines, the performance of skin tests, and for bacteriologic, serologic, and parasitic investigations. An appendix contains a list of equipment and of reagents necessary to the office laboratory, and directions for preparing reagents and solutions. The book also contains a table of normal values for clinical laboratory analysis and an outline of the laboratory findings in the important diseases.

The subject matter has been extensively revised in this ninth edition, and many new tests have been added. The section on serodiagnosis of syphilis has been completely rewritten. It includes a thorough presentation of the various methods of analysis as well as an authoritative discussion of the interpretation of the results, stressing the necessity for the use of multiple procedures. The section on hematology has been altered to include the Ottenberg classification of anemias, a discussion of hematopoiesis, and colored plates beautifully reproducing the appearance of normal and abnormal blood cells. Among the new tests added are: inorganic phosphorus and phosphotase in the blood; sulfate in the blood and urine; serum lipase; Vitamin C in blood and urine; sulfanilamide in blood and urine; and the hippuric acid test of liver function.

This revised volume is completely up-to-date and satisfies the need of every physician for a clinical laboratory technic and reference book. J. E. K.

DR. COLWELL'S DAILY LOG FOR PHYSICIANS

A brief, simple, accurate financial record for the physician's desk. Colwell Publishing Company, Champaign, Illinois, 1939. Price, $6.00.

Physicians who are not completely satisfied with their present system of keeping appointments, lists of services rendered during the months, their personal accounts, and the cash and credit records of their offices, would do well to acquaint themselves with this Daily Log. In it the average practitioner will find the answer to his many problems. It is by far the most outstanding effort in this field which the reviewer has seen.

Perhaps the most valuable feature of this Daily Log is the inclusion of a business summary sheet at the end of each month. Running totals may be carried from month to month, so that at the end of the year one will find the compilation of income tax returns surprisingly simple. Sections are provided for an obstetric waiting list, notifiable diseases, death records, narcotic records, and the necessary social security tax notifications.

The busy general practitioner who desires a complete, systematic, time-saving device for the maintenance of his office records, will gladly welcome the yearly publication of this valuable volume. D. K.

HEADACHE AND HEAD PAINS

By Walton Forest Dutton, M. D., formerly medical director, Polyclinic and Medico-Chirurgical Hospitals, Graduate School of Medicine, University of Pennsylvania. Illustrated. F. A. Davis Company, Philadelphia, 1939. Price, $4.50.

This is a novel alphabetical consideration of the problems encountered in the differential diagnosis of headache and head pains. It forms a complete therapeutic index for ready reference.

The author has included more than two hundred affections which cause headache, and analyzes each cause specifically. He deals briefly with the pathology and diagnosis of each condition, and then details the treatment which will afford the greatest relief. The text includes hundreds of tried and true prescriptions which should prove invaluable to the general practitioner.

This reviewer would describe the volume as a modern approach to an age-old problem. J. W. C.

SURGERY OF THE EYE

By Meyer Wiener, M.D., professor of clinical ophthalmology, Washington University School of Medicine. W. B. Saunders Company, Philadelphia and London, 1939. Price, $8.50.

Ophthalmic surgeons are fortunate in being able to obtain the surgical experiences of such a practical operator as is the author, to digest at their leisure. This book of 419 pages is adequately enhanced by 396 illustrations or serial sketches to picture the operative technics which are described in detail.

This work does not propose to be an atlas of various operative procedures, but is instead, an outline of the operative procedures of choice, in Meyer Wiener's opinion, for each ocular condition considered surgical in character. Therefore the number of operations for each entity are very limited. Herein lies the value of this work. Those ophthalmologists who have not yet enjoyed a long or large surgical experience, will find the book a distinct aid in selecting the operative procedure best adapted to each case. Effective simplicity is the keynote throughout, for the preparation of the patient, the eye itself, the operative technic, and the postoperative care. The management of complications is discussed in great detail.

Meyer Wiener is noted for developing simple niceties of technic that materially facilitate the minute technical difficulties encountered in ocular surgery. C. C. J.

A TOPOGRAPHIC ATLAS FOR X-RAY THERAPY

By Ira I. Kaplan, M.D., clinical professor of surgery, New York University Medical College; and Sidney Rubenfeld, M.D., instructor in surgery, New York University Medical College. The Year Book Publishers, Chicago, 1939. Price, $4.00.

Dr. Kaplan and Dr. Rubenfeld have prepared an atlas which should prove of great benefit to the medical profession. Although intended primarily for radiologists, its application for the other branches of medicine is valuable, especially for accuracy in localizing various internal structures.

The authors have prepared simple, accurate plates for the location of cerebral lobes, the lobes of the lung, all the lymphatics, the brachial and sciatic nerve plexuses, sinuses, gastro-intestinal lesions, genito-urinary tract—in fact, all except the extremities have been included. To many, the position, size and direction of the treatment cone will be especially helpful. A real contribution is the inclusion of lateral positions of the various structures considered.

A. B. P.

OFFICE GYNECOLOGY

By J. P. Greenhill, M.D., professor of obstetrics and gynecology, Loyola University Medical School, Chicago. The Year Book Publishers, Chicago, 1939. Price, $3.00.

This small book contains 400 pages and covers forty-three subjects. It was written as a result of the interest manifested in a course in office gynecology given by the author at the Cook County Graduate School of Medicine, and is intended primarily for the general practitioner who wishes to refresh his memory on office procedures, both medical and minor surgical, pertaining to gynecology.

Some of the chapters are short, but the subjects are presented in a style which is simple and concise so that the essential points for diagnosis and treatment are adequately covered. Suggested procedures are clearly described and the illustrations are large enough to be easily interpreted. There is a well written section on endocrinology and menstrual irregularities. Other chapters include: Trichomonas vaginitis, gonorrhea, cervical lesions, sterility, diathermy and Elliott treatments, control of conception, carcinoma of the uterus and cervix, local anesthesia, backache, pessaries, and vaginal douches.

This little book is a handy reference book and will be an addition to any physician's library. R. S.

PRACTICAL OBSTETRICS

By P. Brooke Bland, M. D., emeritus professor of obstetrics, Jefferson Medical College; and T. L. Montgomery, M.D., clinical professor of obstetrics, Jefferson Medical College. Third revised edition. F. A. Davis Company, Philadelphia, 1939. Price, $8.00.

This textbook of obstetrics is designed particularly for the medical student and the general practitioner. The subject matter, while essentially not unlike that of other obstetric texts, is presented in an unusually well organized, brief and interesting form. Throughout the text the authors have succeeded in presenting their subject in a clear and concise manner, amply illustrated by numerous well chosen plain and colored plates.

Much emphasis has been placed upon the mechanism of labor in normal and abnormal presentations, as well as on the pathology of labor. The chapters on the toxemias of pregnancy, puerperal complications, and the newborn child are up-to-date and excellent. The carefully prepared bibliography providing additional references from the recent literature should be very helpful to the student, the busy interne and practitioner. A. W. B.

THE 1939 YEAR BOOK OF PHYSICAL THERAPY

Edited by Richard Kovács, M.D., clinical professor and director of physical therapy, New York Polyclinic Medical School and Hospital. The Year Book Publishers, Chicago, 1939. Price, $2.50.

Dr. Kovács has selected the 226 best articles, of more than one thousand contributions which appeared in the current medical literature of twelve countries, as worthy of review and permenant reference. This is the second volume of the Year Book of Physical Therapy, and is intended to serve as a cumulative reference-encyclopedia in that particular field.

The book consists of two parts, Part I presenting newer developments in methods of physical therapy, and Part II dealing with the newer concepts of the application of physical therapy in the general and specialized fields of medical practice.

As a practical, up-to-date and compact reference book, the publishers have made an excellent contribution to medical literature with regard to the use of physical therapy. E. M. G.

PRIMER OF ALLERGY

By Warran T. Vaughan, M.D., Richmond, Virginia. The C. V. Mosby Company, St. Louis, 1939. Price $1.50.

This compact and humorously illustrated book presents the A B C's of allergy. The author tries to make the subject, which has gained prominence in the last few years, understandable to the average layman. He states succinctly and simply what allergy means and what it includes. In the beginning chapters he defines the allergic state and constitution of an individual by frequent allegories which simplify the understanding of the subject.

At the end of each chapter there is a brief summary, together with pertinent questions and answers relative to the text of the chapter. These are the questions which are most frequently asked of the allergist in his routine practice and their answers clarify what most allergic individuals desire to know. The last chapter pertains to the directions for the patient suffering from either hay fever, asthma, vasomotor rhinitis, eczema, hives and migraine. It is immensely valuable to the sufferers of such allergic conditions and it has been written solely, "so that the victim of the disease may acquire sufficient understanding of his problem, so that he can understand what the doctor is endeavoring to accomplish and can give the physician his own personal assistance toward that objective."

This book will be exceedingly interesting for both the layman and the doctor; for the layman, if he happens to be allergic; and for the doctor, if he wants a simplified insight and understanding in regard to the elementary essentials of allergy.

L. J. N.

DISEASES OF THE FOOT

By Emil D. W. Hauser, M.D., assistant professor of bone and joint surgery, Northwestern University Medical School. W. B. Saunders Company, Philadelphia, 1939. Price, $6.00.

Filling a definite need among physicians, this book has been published to afford the general practitioner as well as the orthopedic surgeon a comprehensive volume dealing with all disorders of the human foot and their treatment. The anatomy and physiology of the foot have been reviewed in a succinct manner, and emphasis has been placed upon the examination, hygiene and care, both conservative and operative, of all disorders of the foot. Several plates in color are effectively presented to complete a well-illustrated volume. The type utilized makes for ease in reading.

All orthopedic surgeons might not agree in advocating all of the methods of treatment suggested by Dr. Hauser, such as the use of bone wrenches in the treatment of congenital clubfoot, and the rarity of the indication for fusion operation in the treatment of tuberculosis of the foot in children. The author has omitted several subjects which would enhance the value of the volume, such as a discussion of clawfoot, the value of the Silver, Lapidus and McBride operations for hallux valgus, and ankle fusion for foot drop.

On the other hand, he has presented a very thorough and helpful study of all foot disorders and their treatment. This book should prove a valuable addition to the library of the student and general practitioner as well as the orthopedic surgeon.

E. M. G.

